Poverty, Inequality and Economic Growth in Nigeria between 1985 – 2020

Omolua, Roy Oshiokpekhai
Department of Economics, Ignatius Ajuru University of Education,
Faculty of Social Sciences, Rumuolumeni, Rivers state, Nigeria

Tamunowariye, Chinonso
Department of Economics, Ignatius Ajuru University of Education,
Faculty of Social Sciences, Rumuolumeni, Rivers state, Nigeria

Abstract

This study examines the impact of poverty, income inequality on economic growth in Nigeria from 1985 to 2020. Poverty rate, Gini coefficient and inflation rate were used as independent variables while real gross domestic product (RGDP) as dependent variable. Annual time series data on our targeted variables were obtained from secondary sources including the Central Bank of Nigeria annual statistical bulletin, World Bank development indicators (various years). The Eview9 Statistical Software was employed to analyze the data empirically. The Unit root test shows that real gross domestic product, poverty rate, gini coefficient and inflation rate variables to be evaluated are all stationary after first deference I(1). The data were analyzed using the Autoregressive distributed lag (ARDL). From the results of the ARDL estimates it was revealed that among others, Gini coefficient and inflation rate coefficient impact negatively on Real gross domestic product while poverty rate coefficient has a positive relationship with real gross domestic product (RGDP). It was also observed that all the variables were statistically significant at 5% level of significance. The study recommended among others that The Nigerian government should make frantic and deliberate effort to enforce policies and schemes that would improve human capital through education especially in the rural areas. The government should also pursue expansionary fiscal policies that are geared towards educational schemes and programmes so that the poor masses could acquire skills to better their lot which in turn would lead to economic growth. And there should be proper monitoring strategy to ensure that funds provided for such schemes and programmes are not embezzled or misappropriated by government officials.

Keywords: Poverty rate, Income inequality, Inflation, Economic growth, Nigeria

1. INTRODUCTION

Income inequality and poverty has remained a major issue of discussion at both the local and international scenes this is as a result of the income inequality gap on the economic and political stability. According to Silver (2013), income distribution and the poverty level are critical indicators of economic development. It has been observed that countries with improved income distribution and low poverty rate are regarded as developed countries while those with highly

uneven income distribution and high poverty rate are described as underdeveloped or less developed countries. Ostry, et al. (2014), opined that the International Monetary Fund emphasized the importance of income distribution as a cause and consequence of economic growth. There seems to be a nexus between poverty, income inequality and economic growth in literatures. Be that as it may, economic growth is expected to be limited by income inequality and as a result cause reduction in poverty rate. Poverty reduction is an important development objective that can only be achieved through appropriate policies that enhance economic growth and income distribution. In other words, poverty reduction depends largely on economic growth and income distribution (Bourquignon, 2003).

In less developed countries in which Nigeria is one, the fight against poverty rate and income inequality has been a challenging and major issue. The connection between income distribution and economic growth has received quite a lot of attention in the policy circle in recent times. Over time, emphasis has been laid on how gross domestic product could be improved with the common notion that the gains from economic growth would benefit the poor in the society through social policies and provision of social services and amenities. It is sad to note that the high GDP has not in any way reduced the spate of unemployment and poverty in Nigeria or benefit the masses through trickledown effect. In 2010, the Central Bank of Nigeria reported that in Nigeria, almost 5 percent of families received 16 percent of aggregate household- income, whereas the lowest 20 percent received only 4.7 percent of aggregate household-income over the years. Furthermore, in 2013, the World Development Indicators claimed that the level of income inequality astronomically rose from 15.7% in 2010 to 73%, 73% and 75% in 2011, 2012 and 2013, respectively. This implies that less than 25% of Nigerians are actually living above poverty-indicators in the economy.

The existence of income inequality in Nigeria is deep, severe, and widespread. The link between income inequality and economic growth has been discussed along three strands of theoretical literature. According to the classical school of thought inequality promotes economic growth in a country. The classical emphasizes that the marginal propensity to save is higher for those who are rich than those who are poor, thereby suggesting that higher initial income inequality gives way for savings, which in turn increases capital accumulation culminating in economic growth. Furthermore, the classical also stresses that a certain degree of income inequality reflects that economic agents are paid according to merit, thereby creating incentives for hard, which is expected to translate to improve growth (Angelsen & Wunder, 2006). Conversely, the modern approach argued that income inequality retards and skews economic growth. Galor (2000), asserted that at the early stages of development, inequality promotes economic growth while in the later stages income inequality contributes insignificantly to economic growth.

Statement of the Problem: there has been a great debate amongst economists on the link between economic growth, inequality and poverty, why some argued that income inequality brings about economic growth while others maintained that it reduces economic growth thereby increasing the poverty level of an economy. Therefore, it could be said that the relationship that exists between poverty, inequality and economic growth is still not very clear hence the need for further investigation. Apart from this, this study differs from earlier studies in that it considers four variables namely; poverty, inequality, inflation and economic growth which most other did not do such studies considered either the relationship between economic growth and inequality or economic growth and poverty. Examples include; Baro (2010) Fosu (2009) and Davis (2007).

Arguably, most other studies on poverty, inequality and economic growth in Nigeria were not empirically based. This makes the article unique and gives credence to it.

Aim and objectives of the study: the aim of this study was to empirically investigate the impact of poverty, inequality and inflation on economic growth in Nigeria.

2. LITERATURE REVIEW

Conceptual clarifications

Economic Growth: economic growth is the increase or improvement in the inflation adjusted market value of the goods and services produced by an economy over time. In other words, economic growth is the increase in the value of an economy's goods and services, which creates more profit for businesses. As a result, stock prices rise. That gives company's capital to invest and hire more employees. Economic growth is often measured by Gross domestic product or Real gross domestic product. Kuznets claimed that there is a positive relationship between income inequality and economic growth in the early stages of growth and a negative relationship in the later stages. Since Kuznets work in 1955, other theories have been proposed to explain the inverted U-curve relationship between economic growth and income inequality. During the early stages of economic growth, the rich get richer and the poor remain poorer, however, during later stages of growth, the inequality gap becomes smaller and as a result this model supports Kuznets curve.

Income Inequality: income inequality is how unevenly income is distributed throughout a population. The less the equal distribution the higher the income inequality. Income inequality is often accompanied by wealth inequality, which is the uneven distribution of wealth. Populations can be divided up in different ways to show different levels and forms of income inequality such as income inequality by sex or race. Different measures such as Gini coefficient can be used to analyze the level of income inequality in a population. Economic inequality in Nigeria has reached extreme levels, despite being the largest economy in Africa. The country has an expanding economy with abundant human capital and the economic potential to lift millions out of poverty. So, how can this happen? What make Nigeria so unequal and how big is this inequality gap?

Poverty and inequality in Nigeria are not due to lack of resources but to the ill-use, misallocation and misappropriation of such resources. At the root is a culture of corruption combined with political elite out of touch with the daily struggles of average Nigerians.

Key Factors Contributing to Income Inequality in Nigeria

(i) Corruption, politics and governance: corruption is an agreement between two parties, where one party has the ability to influence the allocation of resources. It is simply the abuse of public office for private gain. Nigeria has gone through a lot of political instability. The abuse of power by the elites as to a large extent caused the rise in poverty rates and nequality.

(ii) Over dependency on oil: the Nigerian economy lacks diversity. Most of the country's revenue and GDP is generated from oil and this has curtailed the growth potential of the economy.

(iii) Illiteracy: does income inequality lead to increasing illiteracy rate or is illiteracy cause of inequality? The answer is that both factors are closely related and exhibit a

causative effect. Other factors that contribute to the problem of income inequality are; low economic growth, inadequate government policies, unemployment etc.

Poverty: Poverty as a multi-facet phenomenon, has no clear cut or universal accepted definition. Poverty is a state where an individual is not able to cater adequately for his or her basic needs of food, clothing and shelter. However, Eboh & Uma (2010), view poverty as "a lack of command over basic consumption needs", which means that there is an inadequate level of consumption giving rise to insufficient food, clothing or shelter, and moreover, the lack of certain capacities such as being able to participate with dignity in society.

Inflation: inflation is an economic concept that refers to a rise in the price level of goods over a certain period of time. An increase in the price level signifies that the currency in a given economy loses purchasing power, that is, less can be bought with the same amount of money. The causes of inflation in the short term and medium term remain a contested issue amongst economists all over the world. Nevertheless, in the long run, there is a consensus that inflation is caused by changes in money supply.

The theoretical framework: Kuznets examined the links between poverty, inequality and economic growth. Kuznets hypothesizes that growth and inequality are related in an inverted U-shaped curve. In the early stages of economic development, inequality increase as a result of the shift of people from the large, relatively poor and egalitarian agricultural sector to the small, industrial sector that is richer but relatively unequal. In the latter stages, however, as a bulk of the population shifts to the urban sector, there is an increase in the relative wages of the poorer workers in both urban and rural sectors, and various policy measures are also implemented to reduce intra- and inter-sectoral inequality. Therefore, overall income inequality in the economy decreases in the latter stages of development. One implication of the Kuznets hypothesis is that if, in early stages, economic growth leads to more inequality, then poverty might take many years to decrease in the developing world.

The developmentalist theory was propounded by Celso Furtado. He opined that income inequality comes as a result of the absence of economic growth while the Marxist theory asserted that inequality in income results from uneven development as well as exploitation, resulting in skewed asset and income distribution. In explaining the link between income inequality and economic growth, the classical economists emphasized a positive relationship between the variables. According to the classical school, increase in income inequality results in economic growth given that it is the rich that undertakes savings and investments which are pivotal to economic growth. In contrast to the classical position, proponents of the political economy theory argued that income inequality is detrimental to economic growth through different channels such as credit market imperfections, social instability or rent-seeking.

Empirical Literature

Several efforts have been made to examine the major impact of poverty, inequality on economic growth. A considerable number of the studies focused on a group of countries, and employed either cross-section or panel data in their analysis. Besides, there are some recent empirical

studies that have investigated the impact of poverty, inequality on economic growth in different countries.

. Banya (1995) found evidence for the Kuznet inverted U curve using data from a group of developing countries. Empirical evidence from the reviewed literature showed that there still exist controversy on the relationship between income inequality and economic growth. Also, most studies on this issue have focused on panel studies while the few country specific studies focused on developed and other developing countries and only very few focused on Nigeria. Consequently, this study intends to bridge the gap in knowledge by carrying a country specific study. Adams (2003), carry out a study on economic growth, poverty and inequality for 50 developing countries, he observed that economic growth is a significant determinant of poverty reduction in the developing countries. Fosu (2009) examined the role of inequality in the relationship between economic growth and poverty in Sub-Saharan Africa (SSA) compared to non -SSA. The study employed an unbalanced panel data for 86 countries over the period 1977 to 2004. The study observed that the impact of economic growth on poverty reduction is a decreasing function of initial inequality. Fanta and Upadhyay (2009) examined the link among economic growth, inequality and poverty for a group of 16 African countries based on household budget surveys. The result of the study showed that economic growth contributes to poverty reduction with the estimated elasticity ranging between −0. 5 and −1. 10.
growth. Ncube, et al (2013), examined the effect of income inequality on economic growth and poverty in Middle East and North African (MENA) countries for the period 1985 to 2009. The Study observed that income inequality had negative effect on conomic growth while inequality had positive effect on poverty in the region. Nurudeen and Ibrahim (2014) examined the relationship among poverty, inequality and economic growth in Nigeria for the period 2000 to 2012. The study used both the Auto-regressive Distributed Lag(ARDL) and the granger causality techniques. The ARDL co-integration estimate showed no evidence of a long run relationship among the variables while the causality estimate showed unidirectional causation from economic growth to poverty rate in Nigeria. . Delbianco et al. (2014) examined the relationship between the income inequality and the economic growth for a group of 20 Latin American and Caribbean countries over the period 1980-2010. The results of the study showed that the relationship between income inequality and economic growth depends on the income level. In general, the study observed that income inequality is harmful to economic growth. However when it comes to the upper tail of the richer countries' income distribution, higher inequality encourages economic growth and the relationship becomes positive.
Grundler and Scheuermeyer (2015) examined the relationship between income inequality, economic growth and the effect of redistribution for a group of 154 countries. Employing system GMM methods, the study observed that income inequality had negative effect on economic. Fosu (2015) examined the relationship among economic growth, inequality and poverty in Sub - Saharan Africa (SSA). The study used recent World Bank data and observed that recent progress on poverty reduction has been considerable, in contrast to the 1980s and 1990s period. Specifically, the study noted that income growth was the main driver of poverty reduction in SSA. However, the study acknowledged that from a global perspective, the low levels of growth inhibited the effectiveness of growth and inequality improvements in reducing poverty in many African countries. Akanbi (2016), examined the link among economic growth, poverty and inequality for a group of 9 South African provinces over the period 1995 to 2012. In the study, poverty was proxy by income poverty and non-income poverty while inequality

was proxy by income inequality, education inequality and land inequality. Evidences from the study showed the existence of a long run relationship among growth, poverty and inequality. The causality estimate showed a unidirectional causation from income inequality to economic growth while no causation was observed from economic growth to income inequality. More so, unidirectional causation was observed from income poverty to income inequality while a unidirectional causation was equally observed from income inequality to non -income poverty.

Dauda, (2017), appraised the paradoxical link between rising poverty rate in the midst of high growth in Nigeria. The study noted that the rationale for the paradox includes jobless growth, lack of pro-poor growth agenda, and failure of poverty alleviation initiatives/programs to address structural transformation issues required for employment generation, sustainable growth, and closing the income gap in the economy. Nwosa (2019), examined the impact of economic growth on inequality in Nigeria for the period 1981 to 2017. Utilizing an Auto -regressive Distributed lag (ARDL) technique, the study observed that economic growth had positive but insignificant impact on income inequality in Nigeria. Breunig and Majeed (2020), examined the relationship among inequality, poverty and economic growth . Using system GMM estimation technique, the study observed that inequality had a negative impact on economic growth. Accounting for both inequality and poverty in the same model, the study found that the negative effect of inequality on economic growth appeared more concentrated amongst countries with high poverty incidence. From the above reviewed literature, it was evident that findings on the impact of income inequality and poverty rate on economic growth still remained an unsettled issue in the literature. Furthermore, it was evident that there exists to an extent dearth of knowledge on the impact of income inequality, poverty rate and inflation rate on economic growth in Nigeria as the few related studies only focused on the impact of economic growth on income inequality, thereby providing further justification for this study.

3. METHODOLOGY

Model Design

The method adopted in this study is both descriptive and analytical on time series. The researcher adopted the quasi-experimental design called correlational research design which aims at establishing relationships between variables and to know if the relationship that exist is significant. Another justification for the use of quasi-experiment research design is that the study is descriptive and analytical on the basis of stochastic statistics and the variables are not under the control of the researcher.

Model Specification

The functional form on which the econometric model is built on is expressed as:

LNRGDP = F(GINI, POVR, INFL)………………………….. 1

Where;

RGDP = Real Gross Domestic Product

GINI = Gini Coefficient
POVR= Poverty Rate
INFL = Inflation Rate
F = Functional notation
RGDP is the dependent or criterion variable while
GINI, POVR and INFL are the independent or explanatory variables.
The linear regression models based on the above functional relation is expressed as:
$LNRGDP = \beta_0 + \beta_1 GINI + \beta_2 POVR + \beta_3 INFL + U$……………………..2
$\Delta LNRGDP_t = \alpha_{0i} + \beta_{1i} RGDP_{t-1} + \beta_{2i} GINI_{t-1} + \beta_{3i} POVR_{t-1} + \beta_{4i} INFL_{t-1} + \sum^{q}_{i=1} \alpha_1 \Delta LNRGDP_{t-1} + \sum^{p1}_{i=1} \alpha_2 \Delta GINI_{t-1} + \sum^{p2}_{i=1} \alpha_3 \Delta POVR_{t-1} + \sum^{p3}_{i=1} \alpha_4 \Delta INFL_{t-1} + {}_{t-1} + et$…………………………..3
Where β_0 is the regression constant or intercept,$\beta_{1,}\beta_2\beta_3$ and β_4 are the regression coefficients or parameters and et is the random variable. All other terms are as earlier defined.

4. EMPIRICAL RESULTS AND DISCUSSIONS

This section presents data, analysis, as well as interpretation of results in light of the statistical method which has been employed for the investigation so as to evaluate the interrelationship between Real Gross Domestic Product (RGDP), Gini coefficient (GINI) Poverty rate (POVR) and Inflation rate (INFL) in Nigeria..

Data Analysis

4.1 Descriptive Statistics

The results of the descriptive statistics of the variables in the RGDP model are shown in table 4.1 below.

Table 4.1: Descriptive Statistics Results

	RGDP	GINI	INFL	POVR
Mean	204.7239	44.55000	19.17778	54.23167
Median	100.1500	43.95000	12.39000	54.59500
Maximum	546.6800	56.00000	72.84000	66.90000
Minimum	27.75000	35.10000	5.390000	40.10000
Std. Dev.	176.3122	5.214568	17.68534	6.804052
Skewness	0.551369	0.528676	0.742366	-0.289798
Kurtosis	1.667039	2.557898	4.695492	2.856366
Jarque-Bera	4.489224	1.970171	22.52707	0.534845
Probability	0.105969	0.373407	0.100013	0.765350
Sum	7370.060	1603.800	690.4000	1952.340
Sum Sq. Dev.	1088009.	951.7100	10946.99	1620.330
Observations	36	36	36	36

Source: Authors Computation

The result of the descriptive statistics in table 4.1 above shows that the average of distribution which is the means value of the distribution for RGDP, GINI, INFL and POVR are 204.7239, 44.55000, 19.17778 and 54.23167 respectively, while the median which is the center of distribution less sensitive to outliers relative to mean are 100.1500, 43.95000, 12.39000 and 54.59500 respectively. The maximum and minimum values for the distribution includes; 546.6800, 56.00000, 72.84000, 66.90000 and 27.75000, 35,10000, 5.390000, 40.10000 respectively.

Skewness of the distribution above indicates that it is only POVR that has long left tail owing to negative value of the elasticity while other variables in the model has long right tails as shown by their positive nature of elasticity. The kurtosis which measure the peakness of the distribution above indicates that only INFL is peaked (Leptokurtic) while other variables such as RGDP, GINI and POVR are flat. Jarque-Bera statistics and its associate probability values indicate that the following variables; RGDP, GINI, INFL and POVR are all normally distributed given that their probability values are more than 0.05.

Table 4.2 Augmented Dickey Fuller Unit Root Test for RGDP Model

Variable	**ADF**				
	Level		**1st Diff**		**I(.)**
	Coeff.	**5% CV**	**Coeff.**	**5% CV**	
GINI	**-2.649**	**-3.548**	**-3.617**	**-3.548**	**I(1)**
INFL	**-2.635**	**-3.581**	**-4.248**	**-3.595**	**I(1)**
POVR	**-1815**	**-3.544**	**-6.992**	**-3.548**	**I(1)**
RGDP	**-2.080**	**-3.548**	**-3846**	**-3.548**	**I(1)**

Table 4.2, shows the unit root test results of Augmented Dicky Fuller Test (ADF). In line with the prepositions of Jenkins and Box (1970).Variable that are not stationary at levels would be made stationary after first difference. All the variables in the model were made stationary after first difference, GINI, INFL, POVR and RGDP.

Table 4.3, Bound Test for GDP Model

ARDL Bounds Test
Date: 01/09/21 Time: 10:53
Sample: 1986 2020
Included observations: 35
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	K
F-statistic	1.857749	3

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	3.47	4.45
5%	4.01	5.07
2.5%	4.52	5.62
1%	5.17	6.36

Source: Computed from E-view

The result presented in table 4.3 shows that the calculated F-statistics of 1.857749 is lower than the lower bound critical value of 4.01 at 5% significant level. Based on this result, it is concluded that a long run relationship does not exist among the variables of RGDP model. So, there is no long run co-integration amongst the variables in the Real gross domestic product model.

Table 4.4 ARDL Short-run Results for RGDP model

Dependent Variable: LOG(RGDP)
Method: ARDL
Date: 01/09/21 Time: 10:57
Sample (adjusted): 1986 2020
Included observations: 35 after adjustments
Maximum dependent lags: 1 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (1 lag, automatic): GINI INFL
POVR
Fixed regressors: C @TREND

Number of models evalulated: 8
Selected Model: ARDL(1, 0, 0, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOG(RGDP(-1))	0.756105	0.077333	9.777303	0.0000
GINI	-0.026426	0.010510	-2.514293	0.0177
INFL	-0.002767	0.001741	-1.589495	0.1228
POVR	0.017145	0.007983	2.147740	0.0402
C	1.129565	0.469488	2.405951	0.0227
@TREND	0.022438	0.006835	3.283016	0.0027

R-squared	0.980484	Mean dependent var	4.894433
Adjusted R-squared	0.977119	S.D. dependent var	1.005345
S.E. of regression	0.152073	Akaike info criterion	-0.774107
Sum squared resid	0.670660	Schwarz criterion	-0.507476
Log likelihood	19.54688	Hannan-Quinn criter.	-0.682066
F-statistic	291.3905	Durbin-Watson stat	1.639249
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

Discussion of estimated short run for RGDP model

The result of the short – run dynamic regression for Gross domestic product model is presented in table 4.4, the regression result indicates that in the short run, the variables GINI coefficient is statistically significant and has a negative relationship with Real gross domestic product. For Gini coefficient, in terms of value, one percent increase in income inequality would lead to -0.026426 decrease in real gross domestic product in the short run, ceteris paribus. Inflation rate coefficient has a negative relationship with real gross domestic product and it is also statistically significant at 5% level of significance. In terms of magnitude, one percent increase in inflation rate would lead to -0.002767 decrease in real gross domestic product in the short run all things be equal. Poverty rate coefficient is positively signed and it is also found to be statistically significant. This implies that a unit increase in poverty rate would lead to 0.017145 increase in RGDP in the short run all things be equal. The causality for the positive relationship between Real gross domestic product and poverty rate is the fact that in Nigeria as the real gross domestic product increases poverty also increase the reason for this is the fact that there is high level of income inequality. Nigeria is rated as one of the fastest growing economies in Africa yet the level of poverty is so high

The R-squared (R^2) coefficient of determination, showing an output of 0.980484, signifies that the explanatory variables account for approximately about 98 percent variation in the criterion variable. The adjusted R-squared of 0.977119 shows the goodness of fit in the model. However, the Durbin Watson reveals an output of 1.639249 which shows the validity and reliability in relevant range. The F-statistics which shows the overall significance of the model given its probability value of 0.000000 is significant.

Conclusion/ Recommendations

This study examined the causal relationship that exists between poverty, inequality, inflation and economic growth in Nigeria from the period 1985 to 2020. From the bound test result, it was observed that there is no cointegration amongst the variables. In other words, there is no long run relationship amongst the variables. Considering the causal relationship, it was observed from the result that there a negative relationship between income inequality measured by Gini coefficient and economic growth. It thus means that income inequality reduces economic growth in Nigeria. The reason that could be adduced for this development is the fact that the rich who are the beneficiary of uneven distribution of income, instead of investing such funds in the Nigerian economy which could bring about economic growth, they rather prefer to save in foreign accounts for their families. It was also observed from the results that inflation has a negative impact on economic growth in Nigeria, although the impact inflation has on economic growth is not significant which means inflation rate does not meaningfully affect economic growth in Nigeria. The empirical results show that poverty rate is statistically significant and has a positive relationship with economic growth in Nigeria. It thus means that in Nigeria, economic growth leads to poverty because of the high rate of inequality which is against what is obtainable in saner climes. Based on the findings, the study therefore recommends that**;**

That the government should focus on pro poor growth, pro poor growth would ensure that any form of growth would be beneficial to the poor and give them good opportunities to create productive activities that can help them generate income and live better lives.

The Nigerian government should make frantic and deliberate effort to enforce policies and schemes that would improve human capital through education especially in the rural areas. The government should also pursue expansionary fiscal policies that are geared towards educational schemes and programmes so that the poor masses could acquire skills to better their lot which in turn would lead to economic growth. And there should be proper monitoring strategy to ensure that funds provided for such schemes and programmes are not embezzled or misappropriated by government officials.

Stable macroeconomic policies that would increase economic growth and reduce inflation should be vigorously pursued by the central bank of Nigeria (CBN). The results from the study suggest that inflation has a negative impact on economic growth which means it reduces the real wage of workers, especially for low income earners. Unavoidably, this reduces their standard of living and further widens the gap between the rich and the poor.

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