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THE SYNERGY OF ECONOMIC GROWTH, INCOME INEQUALITY, AND POVERTY IN THE CITY OF SURAKARTA

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Abstract

Economic growth is one of the conditions to improve the quality of life of an area. The improved quality of life is marked by the level of income, level of education, and an increased degree of health as well. But the goal of improving people's quality of life is not easy. The purpose of this study is to analyse the relationship between economic growth, income inequality, and poverty that occur in the city of Surakarta. The results of the analysis will provide an overview for policy makers to be able to improve synergy between development programs, between government service organizations (OPD), and also coordination between government officials. The analytical method used was quantitative descriptive method. The data used were seconddary data obtained from Bapppeda and BPS. Correlation analysis was used to get the relationship between variables. The conclusion was Surakarta City's economic growth has shown good performance and inflation could be controlled. However, the income inequality tended to increase even though the number of poor people had decreased from year to year.

Keywords: *Inequality of income, poverty, economic growth,*
JEL Classification*:O44, E62, I32*

1. INTRODUCTION

Economic growth is one of the pre-requisites in economic development. Economic growth marks the increase in output produced by the population. Increased output is expected to coincide with an increase in overall population income. In many cases in other countries it has been found that not all economic growth can lead to an increase in overall income. Growth always has a positive elasticity with a reduction in the amount of poverty in Brazil (Ferreira, *et al.*, 2010). Whereas in Indonesia at the national level also showed similar symptoms shown by high economic growth, but it seems that it is not correlated with the Gini index.

Paying attention to strategies and policies that emphasize economic growth has several consequences, one of which is widening economic inequality. Economic development that is carried out in the regions often results in the transfer of welfare rather than an increase in welfare. The assumption used is the *trickle down effect*, but the fact is that the results of regional development are not felt by all levels of society or do not trickle down. When this condition occurs, regional development is successful from the aspect of regional macroeconomic size, but has not achieved the goals and targets as expected. This condition creates a *trade off* between growth and equity.

In terms of growth, regional development is said to be successful if it is proven that there is a measurable increase in output from the GRDP value sourced from the economic sector. On the other hand, from the aspect of equality it cannot be said to be successful if the growth that occurs is not followed by the aspect of equity. If this condition occurs, the efforts of the regional government to improve the welfare of the population as mentioned have been unsuccessful, or there can also be a situation where regional economic growth is high, but not followed by reducing poverty levels and income disparities.

On that basis, it is very important for the Surakarta City Government to examine whether the economic development that has taken place so far has been able to reduce poverty and inequality in income distribution or not. This will be the basis for the Surakarta City Government in formulating policies and strategies needed so that the economic development is able to significantly reduce poverty and income distribution disparities, so that development goals to improve community welfare can be achieved bearing in mind that development goals are not merely an increase in economic growth, but it also has another dimension, namely reducing poverty and income distribution disparities as a measure of community welfare.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

The classical theory believes that economic growth is supported by abundance of natural resources, while human capital and capital goods stock are not too dominant. In contrast to Solow's opinion, the dominant factors that influence are human resources and technological development. In Solow's research (1962), it reveals that the highest contributor of economic growth in the United States is technological progress. The American economic growth is 2.75 percent while the growth of the technology sector is the biggest contributor to economic growth. The technology sector grows by 1.5 percent, while United Stated's total economic development is 2.75.

Several studies that discuss the topics of economic growth and poverty show a negative relationship. The interprettation of these results means that economic growth can significantly reduce poverty.

Adam, R (2003) explains that growth is an important tool to reduce poverty in developing countries. When economic growth is measured through consumption surveys, there is a strong relationship between economic growth and poverty reduction. Whereas when economic growth is measured by GDP per capita, the relationship between economic growth and poverty reduction still exists. Economic growth reduces poverty because growth has little impact on income inequality. Bhanumurthy & Mitra (2004) describe efforts that have been made to assess the impact of economic reforms on poverty by decomposing changes in the ratio of poverty over time to the average effect, the effect of inequality and the effect of population shifts.

The previous study by Lin & Zhang (2015) examine the theory of economic growth in the context of economic development and explore the possibility of sustainable growth in the People's Republic of China (PRC) in the long run. This study believes that PRC has the potential to maintain relatively high growth rates. In other studies, Ravallion & Chen (1997) find that changes in inequality and polarization are not related to changes in living standards. Deteriorating distribution in the economy and negative growth are the causes of losses in distribution.

Poverty it self is known in two forms, relative poverty and absolute poverty. BPS provides an understanding that poverty is a relatively poor condition due to the influence of development policies that have not been able to reach all strata of society, thereby causing an unequal distribution of income. Poverty is absolutely determined based on the inability to meet the minimum basic needs such as food, clothing, health, housing and education needed to be able to live and work. Minimum basic needs are translated as financial measures in terms of money. The value of minimum basic needs is known as the poverty line. Residents

whose income is below the poverty line are classified as poor.

Another term that has also been put forward as a discourse is structural poverty and cultural poverty. Structural poverty is poverty that is suspected or diverted due to structural conditions, or unfavorable living arrangements. It is said to be unprofitable because the order not only publishes but (further than that!) also perpetuates poverty in society. In such a structural condition poverty occurs not caused by natural causes or by personal causes, but by unjust social order. This unfair arrangement causes many citizens to fail to get opportunities and / or access to develop themselves and improve their quality of life, so that those who are poor and trapped into this unfair treatment become all-starved, unequal to the demands for a decent and decent life with human dignity.

Furthermore, it is said that cultural poverty is caused by the factors of custom and culture of a particular region that bind a person to remain attached to the poverty indicator. Whereas the poverty indicator should be reduced or even gradually be eliminated by ignoring certain cultural and cultural factors that prevent someone from making changes towards a better level of life.

Inequality of Income Distribution and Economic Growth

Per capita income is measured by dividing GDP or GNI by the population. The GDP or GNI used can be in the form of real GDP or GNP (at constant prices), it can also be GDP or GNI at current prices. The population used is the population of the middle of the year.

Per capita income is used to measure the level of welfare of a population of an area in general. The higher the value, the higher the prosperity of the population of the region. Per capita income does not have a relationship with the level of income inequality in a region, meaning that a country with high per capita income can also have high inequality. If this happens, it means that the economic structure of the region is still dependent on a particular group of people. Inequality analysis is needed considering whether the results of regional development can be enjoyed by the whole community more equitably. If this index is getting better, the level of community well-being between individuals and their regions will also improve.

Inequality is measured using the Gini Ratio, which is derived from the Lorenz Curve. The higher the Gini Ratio value, means the Lorenz curve is getting farther from the diagonal, and the income distribution is increasingly uneven (the inequality is getting sharper). Look at the example above: 75% of the population controls 40% of income (meaning 25% of the population controls 60% of income). Gini Coefficient = ABC / ABD.

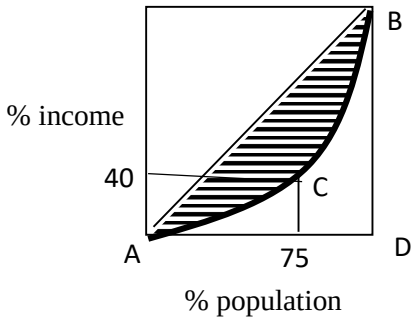

Figure 1. Lorenz Curve

The theory of inequality and economic growth is put forward by Kuznets who shows that the relationship between inequality and income per capita form an inverted U shape curve. In essence, the theory states that inequality will initially increase with economic growth, to a certain extent inequality will decrease with economic growth. However, the Kuznets hypothesis does not apply absolutely because of the different characteristics bet-ween regions. In addition, inequality is also related to many things.

Inequality relates to unemployment and poverty, and in this case economic growth is a necessary condition for poverty reduction while the sufficient condition is that economic growth must spread in each group both directly and indirectly. It directly implyes that economic growth occurs in sectors where many low-income residents are employed. Indirectly means that local governments have the ability to distribute economic growth from other sectors that are not dominated by low-income residents to low-income population groups.

Based on this description, poverty in various forms and their understandding is a problem that can arise at any time all the time in each region. Poverty is caused by various things, both because of the development process itself and because of the structure and culture of the community.

3. RESEARCH METHOD

The stages carried out in this study are as follows:

Data Collection

Considering that poverty is a multisectoral multidimensional problem, data from all relevant official offices (OPD) are needed that deal with poverty, inequality, employment, economic, education, and population problems. Regional macroeconomic data are also needed in order to support poverty and inequality analysis (Arnheim, 1971; Coltheart, *et al.*, 1993; Freud, 1970; Jensen, 2000; McKenzie, Betts, & Jensen, 2010; Passons, 1967).

Data Processing

Processing macroeconomic data on poverty and inequality

Regional macroeconomic data analyzed is macroeconomic data that is directly related to poverty and inequality problems. This data will be processed using a statistical approach so that information on macroeconomic conditions in Surakarta City is of relevance to the problem of poverty and inequality, includeing relative comparisons with other regions.

Processing of inequality data

Inequality in income distribution between regions can be measured by the Williamson index as follows:

$$IW = \left\{ \frac{\{(Y - Y_i)^2 F_i/N}{Y} \right.^{,5}$$

where:
IW = Williamson Index
Y = Real Income per Kapita Region/municipality
Yi = Real Income per Kapita District
Fi = District Population
N = Region/Municipality Population

From this analysis, it can also be made a typology of class with 4 quadrants:

1) High inequality and high poverty
2) High inequality and low poverty
3) Low inequality and high poverty
4) Low inequality and low poverty

Data Processing of OPD Program related to poverty and inequality

In this processing, the program and activities of all DPOs that are related to poverty and inequality will be identified, both directly and indirectly. Based on the identification results, program and activity information for each OPD will be obtained related to poverty and inequality, so a mapping of programs and activities will be arranged so that they are known:

1) OPD program directly related to poverty and inequality
2) OPD programs that are not directly related to poverty and inequality
3) Overlapping OPD programs in terms of poverty and inequality
4) OPD programs related to poverty and inequality that are synergistic (non-mutually exclusive) or those that are not synergistic (mutually exclusive).

4. DATA ANALYSIS AND DISCUSSION

Gross Regional Domestic Product and Economic Growth

Surakarta's GRDP in 2010 reached IDR 21.49 trillion and in 2018 more than doubled to IDR44.2 trillion. The biggest increase from 2010 to 2018 was the education service sector from IDR 785 billion to IDR2.4 trillion or an increase of 206.6%. The second rank was the corporate service sector which rose by 168.3% and the third was the sector of providing food and drink accommodation by 133.7%. The sector that had the smallest increase from 2010 to 2018 was the mining and quarrying sector with an increase of 37.1%.

From its structure, in 2018 Surakarta's GRDP was dominated by the contribution of the construction sector by 27.16%, the wholesale and retail trade sector by 22.4%, and the information and communication sector by 11.39%. Meanwhile the growth in 2018 for the construction sector was 9.72%, the wholesale and retail trade sector were 6.99%, and the information and communication sector were 10.85%. The proportion and growth of these three sectors was quite large and supported more than 50% of Surakarta's GRDP. Some sectors that showed high growth above 7% in 2018 but had a small proportion were the agriculture, forestry and fisheries sector, the electricity and gas procurement sector, financial and insurance services, corporate services, as well as health services and social activities. Thus, the service sector in Surakarta has a very prospective development.

When compared to the condition in 2010 and 2018, based on the calculation of current prices, only the information and communication sector had an increase in the proportion as well as an increase in growth. When using a constant price approach, there are several sectors that have increased both in proportion and growth from 2010 to 2018, namely the electricity and gas procurement sector, the transportation and warehousing sector, the information and communication sector, the corporate services sector, and the health services sector and activities social.

Table 1. Surakarta City's GRDP at Current Prices, 2010 and 2018

Business field	2010	2018
Agriculture, Forestry, and Fisheries	107	219
Mining and excavation	0,599	0,822
Processing industry	1,636	3,722
Electricity and Gas Procurement	47	89
Water Supply, Waste Management, Waste and Recycling	48	64
Construction	6,060,	12,034
Wholesale and retail trade; Car and Motorcycle Repair	5,113	9,855
Transportation and Warehousing	566	1,129
Provision of Accommodation and Food and Drink	1,044	2,442
Information and Communication	2,439	5,047
Financial Services and Insurance	783	1,705
Real Estate	907	1,762
Company Services	136	365
Government Administration, Defense and Mandatory Social Security	1,387	2,466
Educational Services	785	2,409
Health Services and Social Activities	183	497
Other services	222	415
GROSS REGIONAL DOMESTIC PRODUCT	21,469	44,226

Source: Statistical Bereau of Surakarta

Poverty and Inequality

Poverty is a condition of someone who is unable to meet their needs properly. In poverty, there are two measures used, namely the level of depth and severity. The poverty rate of Surakarta during 2014-2018 is seen to show a declining trend from 10.95% in 2014 to 9.08% in 2018. The depth of poverty, in 2017 Surakarta City has a value of 1.87 while in the severity of poverty at 0, 44. Trends between poverty levels, poverty depth (P1), and poverty severity (P2) appear to have the same fluctuation patterns.

When linked to economic growth, during 2010-2018 the pattern between economic growth and poverty rate has the same direction or directly proportional characteristics. Both correlation coefficient values are r = 0.76. This means that economic growth in Surakarta actually has an impact on increasing poverty, whereas ideally economic growth can drive poverty reduction. Thus Surakarta's economic growth does not yet have a clear multiplier effect or transmission mechanism on poverty. This can encourage an increase in the distribution of income in the community.

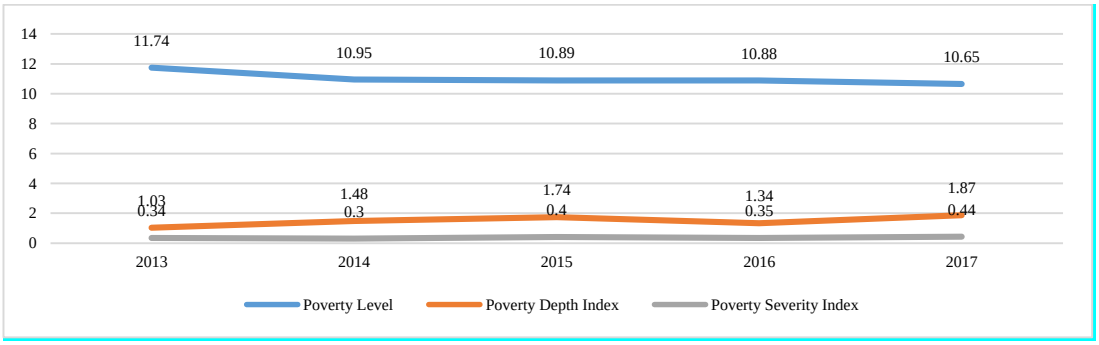

Figure 2. Poverty Level VS Poverty Depth Index VS Poverty Severity Index
Source: Statistical Bereau of Surakarta

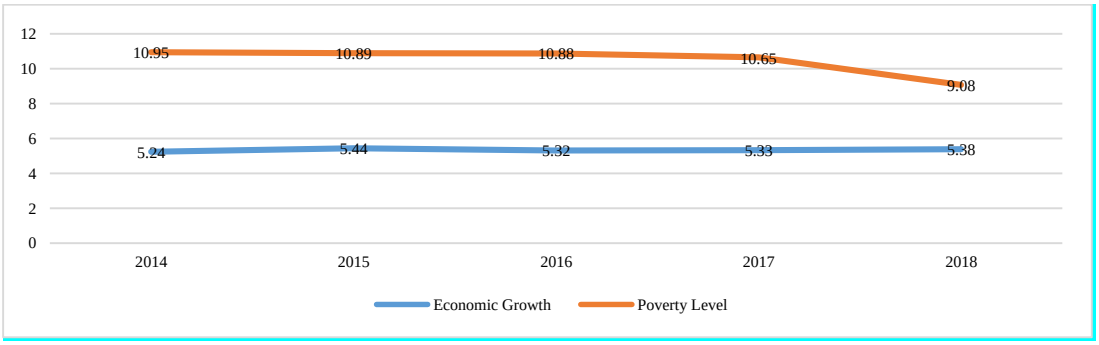

Figure 3. Economic Growth VS Poverty Rate
Source: Statistical Bureau of Surakarta

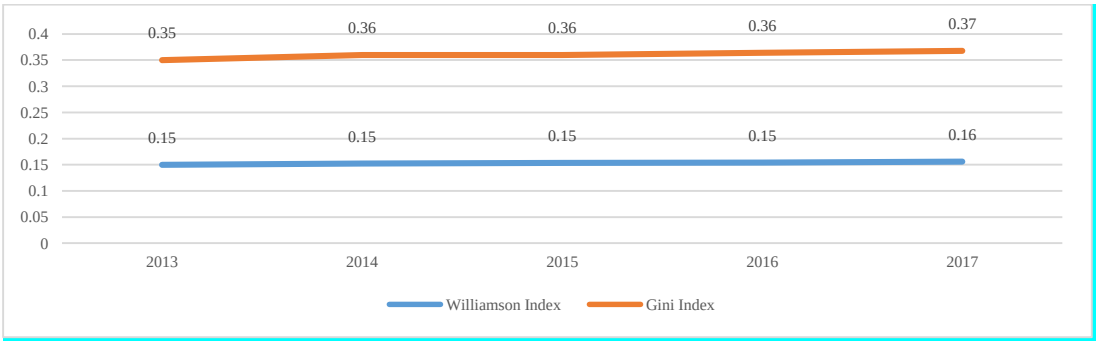

Figure 4. Index Williamson VS Index Gini
Source: Statistical Bureau of Surakarta

However, if the poverty level is associated with GRDP, both of them show a negative relationship. Thus, for economic growth to have an impact on reducing poverty, the GRDP must show a fairly high increase (high economic growth must be) and at the same time the number of poor people must decrease.

To see the unequal distribution of people's income in Surakarta, it can be seen based on the Gini ratio or the Gini index, or the bias can also be seen using the Williamson Index. Based on the Gini index value, the value of the Surakarta Gini index in 2015 was 0.360 and the condition is not different than in 2014. The Gini index score above 0.30 is a condition that needs serious attention.

Meanwhile, if measured by the Williamson index, the level of inequality in Surakarta in 2015 was 0.153 and in 2014 was 0.152. Although the two indexes have different ranges, they both have the same pattern. Thus, it can be concluded that the level of inequality in Surakarta shows an increasing trend. Thus, increasing the economic growth of Surakarta has not had an impact on reducing poverty and inequality.

Gini index data in the region up to now is only available until 2015 and BPS only performs Gini index calculations at the provincial and national levels. This makes it difficult for Surakarta to evaluate the level of inequality that occurs. For this reason, an alternative can be done is to use the Williamson index or to convert from the Williamson index to the Gini index using the geometric mean-order statistical method.

Using the geometric means to convert from the Williamson index to the Gini index; the Surakarta Gini index value in 2016 and 2017 is predicted to be 0.3638 and 0.3679, respectively. Thus, the estimated level of inequality that occurred during 2015-2017 shows an increasing trend.

Table 2. Proxy Index Gini Based on Williamson Index

Type of Index	2014	2015	2016	2017
Williamson Index	0,15	0,15	0,15	0,16
Gini Index	0,36	0,36	0,36	0,37

Source: Statistical Bureau of Surakarta

Table 3. Comparison of Economic Growth

No	Indicator	2016	2017	2018	Mean 2010-2018
1	Surakarta	5.32	5.33	5.41	5.60
2	Province Jawa Tengah	5.26	5.27	5.32	5.31
3	Indonesia	5.03	5.07	5.17	5.40
4	Rata-rata Jawa Tengah	5.37	5.11	5.30	5.30

Source: Central Java BPS for several years

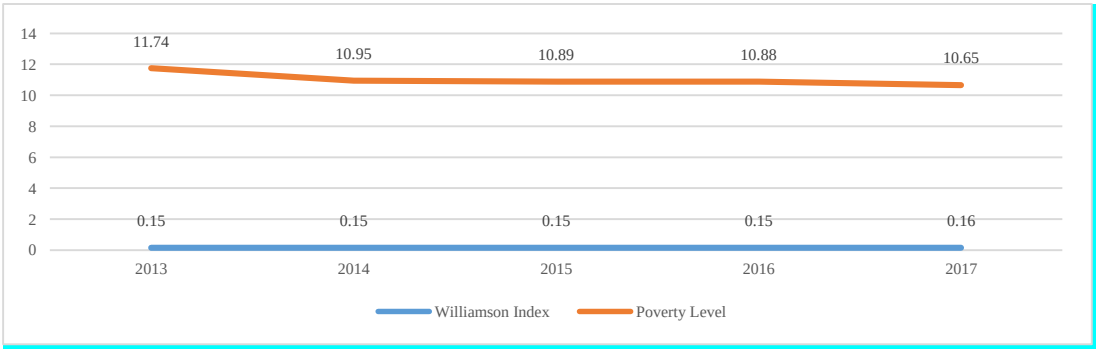

Figure 5. Poverty VS inequality
Source: Statistical Bureau of Surakarta

What is the relationship between poverty and inequality? If the two indicators are illustrated graphically, the level of poverty and the level of inequality (measured using the Williamson index) shows a direct or proportional relationship. Both correlation coefficient values are r = 0.9775 or very close. This means that high levels of poverty have an impact on increasing inequality in income distribution.

Comparison with Central Java Province: Economic Growth and Inflation

Surakarta's economic growth during 2010-2018 was seen to be volatile and the same was true for Central Java, national provinces, and the average of all regions in Central Java. For 2018, Surakarta's economic growth will be higher than that of Central Java province, nationally, and the average of all regions in Central Java. From here in general the performance of Surakarta's economic growth can be concluded very well. Fluctuations that occurred throughout the period also occurred in Central Java and national provinces.

Table 4. shows that the city of Surakarta is compared to other regions in the form of "cities" in Central Java. The number of cities in Central Java consists of 6 cities. In 2017 Surakarta's economic growth was not the highest, it was still below Semarang City and Tegal City, and similar to the growth of Pekalongan City. Among other regions with the status of "city", Surakarta occupies the 3rd position and during 2011-2017 Surakarta has never occupied the top position in economic growth. Economic structure, geographical, and demographic conditions are factors causing differences economic growth.

Inflation and economic growth have a close relationship. Several studies that have been conducted show that there is a causal relationship between the two, meaning that inflation can have an impact on economic growth, but economic growth also has an impact on inflation. This needs to be examined by the causes. High economic growth but followed by high inflation rates indicate an *overheating economy*. The ideal condition that is expected is high economic growth with low inflation.

Table 4. Comparison of Inter-City Economic Growth

No	Indicator	2015	2016	2017	Mean 2010-2017
1	Kota Magelang	5.11	5.17	5.18	5.41
2	Kota Surakarta	5.44	5.32	5.33	5.64
3	Kota Salatiga	5.17	5.22	5.21	5.63
4	Kota Semarang	5.82	5.84	5.64	6.05
5	Kota Pekalongan	5.00	5.36	5.32	5.45
6	Kota Tegal	5.45	5.44	5.46	5.35

Source: BPS of Central Java Province

Table 5. Correlation of Inflation and Economic Growth

City	Correlation of Inflation and Economic Growth
Magelang	0.23
Surakarta	0.10
Salatiga	0.33
Semarang	0.42
Pekalongan	0.52
Tegal	0.21

Source: BPS Central Java Province, data processed

In Surakarta, between 2010-2018 economic growth and inflation were seen as having a positive or directly proportional relationship. Likewise, with other cities in Central Java. This is an early indication that inflation and economic growth in Surakarta do not have strong causality. Inflation in Surakarta is partly caused by "*imported inflation*", which is external factors that occur outside Surakarta. Economic growth did not encourage inflation.

5. CONCLUSION,IMPLICATION, SUGGESTION, AND LIMITATIONS

Poverty and inequality are multidimensional problems because both problems arise due to the interaction of several factors that influence each other. Poverty, inequality, and unemployment are three problems that are closely related and thus require synergy handling. Based on this study Surakarta's poverty level shows a declining trend, and the performance of poverty, inequality, and unemployment rates in Surakarta is relatively good when compared to other regions in Central Java.

There is a strong correlation between the level of economic growth with the level of poverty and unemployment, as well as the level of unemployment and poverty, but the correlation between the level of poverty and relative inequality. In addition, the poverty level has a strong correlation with all components of the HDI so that the reduction in the poverty level has a significant impact on the performance of the HDI component. The level of storage in Surakarta, although still within normal limits, shows an increasing trend. This needs to be watched out for and effective formulation of strategies and programs is needed so that the level of inequality does not increase.

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