Impact of Development on Air Pollution in Rural Areas

by Nya Daniaty Malau

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Impact of Development on Air Pollution in Rural Areas

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Abstract

The economic progress of a country can be seen from its economic growth. One of the efforts to improve the economy is to accelerate regional development. The existence of development in each region leaves problems related to the environment, especially air pollution. These problems are often forgotten, because the development process is still focused on social and economic impacts. This study aims to determine the impact of development on air pollution in rural areas. This study uses data from the PODES (Village Potential) and Village Development Index (IPD) 2018 data collection, as well as several economic variables as instrument variables. The number of observations used is 75,436 villages. The method used is the instrumental regression variable Two Stage Least Square (2SLS). The results of this study indicate that village development has a significant positive effect on increasing air pollution. Good planning is needed in development, so as to prevent negative effects. In addition, monitoring and evaluation of the ongoing/completed development process is required in order to minimize environmental degradation.

Keywords: *Air Pollution, Village Development, Instrumental Variables.*

1. Introduction

Quality air is one of the most important supporting factors for living things, including humans. Raharjo (2009) states that air quality has an impact on the environment and human health. The composition of normal air in the atmosphere includes 78% Nitrogen, 21% Oxygen, 0.9% Argon, and 1% other elements including Carbon dioxide, Neon, Helium, Methane, and Krypton (Arty, 2005; Mukono, 2011). Thus, polluted air, according to Cooper & Alley (2010), is a state of entry or inclusion of compounds in the form of solids, liquids or gases in certain concentrations that disturb the balance of chemical elements making up normal air in the atmosphere. Air pollution is caused by movable and immovable sources which include the transportation, industrial and domestic sectors. The increasing number of industrial factories, power plants and motorized vehicles can produce pollutants as air pollutants (Gasana et al., 2012; Ismiyati et al., 2014). As a result, clean air as a source of respiration becomes polluted which can cause health problems for humans, and can also damage environmental ecosystems.

Several other factors that indirectly affect the increase in air pollution in an area are population growth, high rates of urbanization, low levels of public awareness of air pollution, and unbalanced spatial development. The people's consumption behavior in meeting their daily needs has forced industrialization to develop so rapidly that it has an impact on economic growth (Hirschman, 1968; Wang & Su, 2019).

Economic progress can be reflected in its economic growth. One of the processes of increasing a country's economy is through regional development. Efforts to accelerate national development start from small-scale areas, namely rural areas (Baeti, 2013; Faradiba, F., & Zet, 2020). The Village Law defines that village development is "an effort to improve the quality of life and life for the maximum welfare of the village community". Meanwhile, the objectives of village development are stated in article 78 paragraph (1), namely "improving the welfare of rural communities and the quality of human life as well as poverty alleviation through the fulfillment of basic needs, development of village facilities and infrastructure, development of local economic potential, and utilization of natural and environmental resources sustainable". "In the implementation of village development, it is important to prioritize togetherness, kinship, and mutual cooperation in order to realize the mainstreaming of peace and social justice", as stated in Article 78 paragraph (3).

Population growth will be followed by growth in other sectors, such as industry and transportation (Astuti et al., 2014; De Graaff et al., 2012). Economic growth followed by regional development has an adverse impact on the environment. Like the two blades, developments between sectors have a positive impact on the economy, but on the other hand also have negative impacts, one of which is air pollution. Increased development and the economy will trigger an increase in industrial and transportation activities. The risk that arises is the potential to increase the concentration of pollutants in the air. Air pollution has an impact on health, especially disorders of the respiratory tract, heart disease, high blood pressure, stroke, cancer of various organs, reproductive disorders and even death. (Anonim, 1998; Anonim, 2001; Anonim, 2006; Arifin dan Sutomo, 2003; Lippmann dan Ito, 2006; Tseng dkk. 2012; Orru dkk., 2009; Ranzi dkk. 2011; Lopez-Cima dkk.2011; Bacarelli dkk 2011). This is in line with research conducted by Kwanda (2003), that the implementation of development has a negative impact on the environment, especially environmental pollution.

Based on Law No. 32 of 2009 concerning Environmental Protection and Management, environmental pollution is the entry or inclusion of living things, substances, energy, and/or other components into the environment by human activities so that they exceed the stipulated environmental quality standards. Furthermore, environmental quality standards are defined as the limit or level measurements of living things, substances, energy, or components that exist or must exist and / or pollutant elements whose existence is tolerable in a certain resource as environmental elements. Therefore, in general, the problem of pollution impacted by contaminated media can be classified into 3 groups, namely air pollution, water pollution and soil pollution. In addition, there is also radioactive radiation contamination in the air, water, soil or food/beverage media. Heat radiation pollution can also be in the air and water media (Nordell, 2003).

In particular, this article examines air pollution which is a chemical quality (gas), physics (dust), microorganisms in the air, radiation levels, and noise levels. Air that has been contaminated with pollutants is called polluted air which can damage the environment and human life. Air pollution is getting worse along with technological advances, where with technological advances so that air pollution-producing sources are increasing. Air pollution is caused by air pollutants or what is commonly referred to as pollutants. Each pollutant has a different impact from one type to another (Frank & Engelke, 2005). Substances that can cause air pollution include: Carbon monoxide (CO), Carbon dioxide (CO_2), Sulfur dioxide (SO_2), Nitrogen dioxide (NO_2), Hydrocarbons (HC), Chloro fluoro carbon (CFC), Lead (Pb), and Particulate matter (PM_{10} and PM_5) (Budiyono, 2010).

There are many impacts resulting from air pollution, including disturbing the health of living things, environmental damage to ecosystems, and acid rain. According to WHO states that air pollution is the biggest risk of health problems in the world, it is estimated that in 2016 data about 6.5 million people die each year due to exposure to air pollution (WHO, 2014). Health in humans will be disrupted due to polluted air which can cause diseases such as respiratory infections, lungs, heart and also as a trigger for cancer which is very dangerous (Raaschou-Nielsen et al., 2012; Tugaswati, 2004). The impact of air pollution on the ecosystem environment, both primary and secondary, will have an impact on decreasing productivity levels which have an impact on other sectors (Budiyono, 2010; Kahn & Li, 2020). As well as the impact of air pollution on acid rain, namely an increase in acid rain due to the large industrial growth rate which can cause forest destruction to decrease agricultural productivity. (Xie et al., 2012; Yatim, 2007).

This study will analyze the impact of development on air pollution in rural areas, using Instrumental Variable Analysis (IV). In this method, the variables used are not only independent variables which are then associated with the dependent variable. However, there are catalytic variables that affect the independent variables but are not related to the dependent variable (Khandker et al., 2009; Wulandari, 2010). From this analysis, a model parameter consisting of several variables will be obtained, such as area, the main source of income of the community, and the behavior of the community towards the environment.

2. Method

This study uses data from the PODES (Village Potential) data collection and the 2018 Village Development Index as independent variables and air pollution as the dependent variable. The number of observations used is 75,436 villages in Indonesia. In addition, this research uses data on PDRB per capita districts / cities and changes in the village development index, as well as data on disadvantaged areas in accordance with Presidential Regulation Number 131 of 2015 concerning the Determination of Disadvantaged Areas in 2015-2019.

The stages in this research include (i) inventory of PODES 2018 data; (ii) data tabulation; (iii) descriptive and inferential analysis; (iv) classic assumption test (normality, heteroscedasticity, multicollinearity); (v) data analysis. This study uses Two Stage Least Square (2SLS) regression, which is a statistical technique that uses structural equation analysis. Two Stage Least Square is a development of the OLS (Ordinary Least Square) method. The 2SLS regression analysis technique is used when the error of the dependent variable is correlated with the independent variable. Furthermore 2SLS is useful when there is a simultaneous relationship in the model. 2SLS analysis is a method for obtaining an estimate of the structural coefficient from the reduced-form coefficient which is over identified in the structural equation. In addition, 2SLS can also be used to estimate structural equations that are just identified. In the 2SLS, the independent variables (which are correlated with error) are replaced with their own estimated values. As the name implies, this method includes two consecutive OLS implementations.

In this study using the Instrumental variable method. The instrumental variable method is a method for obtaining new variables that are not correlated with error, but will correlate with explanatory endogenous variables. The equation used is as follows:

$$y = \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_{k-1} x_{k-1} + \beta_k x_k + u \qquad (1)$$

Equation model (1) shows that the variable xk is correlated with u (error). There are 9 instrument variables used, namely: village development index, soil pollution, forest location, availability of springs, slum settlements, community reforestation, burning fields, the existence of excavation sites, and the community's main source of income. This study uses the STATA 16.0 application.

3. Results and Discussion

As many as 75,436 villages in 2017, around 3.51 percent of the villages were outside the forest area, 23.00 percent were on the edge/around the forest area, and 73.49 percent of the villages were inside the forest area. For the main source of income, most of the rural areas make the agricultural sector the dominant sector, amounting to 90.60 percent. Mining and quarrying sector by 0.58 percent, processing industry (factories, crafts, etc.) by 2.77 percent, wholesale/retail trade and restaurants by 3.24 percent, transportation, warehousing, communication by 0.07 percent, Services 2.07 percent, and Other Sectors 0.66 percent. For the existence of springs, 25.66 percent of villages managed well, 21.61 percent were not well managed, and 52.73 villages had no springs.

The existence of slum settlements is a source of environmental pollution. 5.35 percent of villages have slum settlements. For water pollution in villages during the past year, there were 19.32 percent of villages that experienced water pollution. For soil pollution, there are 2.63 percent of villages that experience soil pollution. The burning of fields that people usually do after planting will cause air pollution through the smoke from the combustion. As much as 36.70 percent of the villages burned their fields. The existence of the Group C excavation site (for example: river stone, sand, lime, kaolin, quartz sand, clay, etc.) will affect environmental conditions. 22.44 percent of the villages have excavation sites. For the village development category, 19.16 villages were underdeveloped categories, 73.41 percent of villages had a developing category, and 7.42 percent had an developed category.

Based on Table 2, information is obtained that water pollution, the presence of springs, slum settlements, community reforestation, excavation locations and the main source of income of the community (mostly) have a positive effect on village development. This means that the higher/greater the value of the instrument variable, it will contribute positively to the formation of the village development index. Meanwhile, other variables, such as the existence of villages around forest areas, burning fields, and some of the main source of income for the community have a negative effect on village development.

Some of the instrument variables and control variables have various significance numbers. Of the 14 variables used, only 3 variables were insignificant, namely soil pollution, excavation locations, and main sources of income in the transportation, trade and communication sectors. Meanwhile, 9 variables have a significance at the 1 percent level. These results are in line with research conducted by Makki dan Somwaru (2004) which states that trade has a positive impact on the economic development of a region. This research is also in line with the research that has been conducted by Islam et al.

(2017) which states that the existence of villages around forest areas has a negative role in development.

Table 1 Effect of Instrument Variables on IPD

Instrument Variables	Coefficient	P-value
Water pollution	0,0054479	0,029**
Soil pollution	0,0050105	0,407
Forest area	-0,0059986	0,009***
Water springs	0,0135030	0,000***
Slums	0,0233609	0,000***
Community reforestation	0,0301171	0,000***
Burning fields	-0,0336204	0,000***
Excavation location	0,0014763	0,522
Main Source of Community Income		
Mining and excavation	-0,0236521	0,057*
Industry	0,0688668	0,000***
Trading	0,0256855	0,000***
Transport, warehousing and communication	-0,0086261	0,814
Services	0,0311763	0,000***
Others	0,0345318	0,003***

Note: Significant *** Level 1 %, ** Level 5 %, * Level 10 %

The largest positive coefficient is in the first stage of processing, namely the main source of income in the manufacturing sector. This indicates that the activities of the processing industry have a very positive effect on village development. This phenomenon is in line with the development of an developed village which calls on a village to fulfill its community needs as much as possible. If we pay close attention to the main source of income of society, most sectors have a positive impact on development. This is in line with economic theory, that economic activity will have a positive impact on regional development.

The location factor is an important component in village development. Areas close to the city center tend to be more developed than urban areas. This effect is a spillover from the urban area to the surrounding area. In this study, the territorial factor will be controlled through the existence of the village towards the forest area. Villages located in forest areas tend to be far from urban centers. From data processing, information was obtained that villages located in forest areas have a negative effect on development.

From Table 3, information is obtained that water pollution, soil pollution, slum settlements, burning fields, excavation locations and most of the main sources of income have a positive effect on air pollution. This means that the higher / greater the value of the independent variable will have a positive effect on air pollution or have the opportunity to increase the occurrence of air pollution. Meanwhile, other variables such as forest location, availability of springs, reforestation of the community have a negative correlation with air pollution.

Table 2 Effect of Rural Development (IPD) on Air Pollution

Independent Variable	Coefficient	P-value
IPD (developed)	1,1194080	0,000***
Water pollution	0,1241600	0,000***
Soil pollution	0,2940550	0,000***
Forest area	-0,0125099	0,001***
Water springs	-0,0094778	0,010***
Slums	0,0180576	0,010***
Community reforestation	-0.0232480	0,000***
Burning fields	0.0409539	0,000***
Excavation location	0.0160493	0,000***
Main Source of Community Income		
Mining and excavation	0,0230410	0,239
Industry	0,0821791	0,000***
Trading	0,0072042	0,413
Transport, warehousing and communication	0,0880358	0,126
Services	-0,1392830	0,192
Others	-0,0119369	0,520

Note: Significant *** Level 1%

Some of the instrument variables and control variables have various significance numbers. Of the 15 variables used, only 5 variables were insignificant, namely most of them were the main source of income for the community. Meanwhile, 10 variables have significance at the 1 percent level. This result is in line with previous research which states that development will have a negative impact on air pollution (Cho & Choi, 2014). In addition, the impact of community behavior through reforestation in reducing air pollution is also in line with previous research (Douwes et al., 2015).

The largest positive coefficient in the second stage of processing, namely the development factor. This indicates that development in rural areas has a very positive effect on air pollution. Furthermore, rural development also has an impact on increasing other parameters (Arty, 2005; Raharjo, 2009; Mukono, 2011) among others: (1) temperature; (2) humidity; and (3) noise thereby reducing the comfort of environmental health and simultaneously, having a negative impact on the quality of productivity of the local population and its surroundings.

Because air is not limited by administrative boundaries, the location factor for development activities is an important component in measuring air pollution. Villages located in forest areas tend to have less air pollution than villages outside the forest area. This is because villages that are located in forest areas have oxygen reserves generated from trees around the environment. In addition, the areas around forestry areas tend to be far from urban areas, so that pollution generated from development activities tends to have little impact in villages located around forest areas.

The research findings provide information on the importance of development, but at the same time, simultaneously, rural development has a negative impact on the quality of public health. Therefore, rural development activities must follow the regional spatial planning (RTRW) and regional spatial plans (RTRD) to control negative impacts on public health while maintaining positive impacts on economic growth. In addition, it is also important to monitor and evaluate the ongoing/completed development process regularly and on a scheduled basis in order to minimize environmental degradation. This research still uses perception data from village officials. An accurate measurement of the level of air pollution in the village area is needed so that it can produce more representative results.

4. Conclusion

Development is a government effort in advancing a country. Good development is development that can accommodate economic, social, and environmental aspects. Economic aspects tend to have a positive impact on the development process. However, environmental aspects often become trade offs from the resulting development. One of the problems resulting from development activities is air pollution. Air pollution as a result of development in rural areas includes deviations in air quality parameters, and increases in other parameters, namely temperature, humidity, and noise that affect the quality of productivity of the local community and its surroundings.

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Appendix

Table A.1. Village Area to Forest Area

Description	Number of villages	Percent
in the forest area	2,645	3.51
on the edge of the forest area	17,353	23.00
outside the forest area	55,438	73,49
Total	75.436	100

Table A.2. The Main Source of Income of Most of the Village Population

Description	Number of villages	Percent
Agriculture	68,347	90.60
Mining and excavation	441	0.58
Industry (factory, handicraft etc.)	2,092	2.77
Wholesale/retail trade and restaurants	2,442	3.24
Transport, warehousing, communication	50	0.07
Services	1,565	2.07
Others	499	0.66
Total	75,436	100

Table A.3. The existence of springs

Description	Number of villages	Percent
Yes, managed	19,358	25.66
Yes, not managed	16,302	2.61
No	39,776	52.73
Total	75,436	100

Table A.4. The existence of Slums

Description	Number of villages	Percent
Yes	4,035	5.35
No	71,401	94.65
Total	75,436	100

Table A.5. Water Pollution in the Village during the Last Year

Description	Number of villages	Percent
Yes	14,576	19.32
No	60,860	80.68
Total	75,436	100

Table A.6. Land Pollution in the Village during the Last Year

Description	Number of villages	Percent
Yes	1,987	2.63
No	73,449	97.37
Total	75,436	100

Table A.7. Planting / Maintenance of Trees in Critical Land, Mangrove Planting, and others

Description	Number of villages	Percent
Yes, some residents were involved	12,824	17.00
Yes, the residents were not involved	3,650	4.84
No activity	58,962	78.16
Total	75,436	100

Table A.8. Community Habit Burning Fields / Gardens for Agricultural Business Processes

Description	Number of villages	Percent
Yes	27,687	36.70
No	47,749	63.30
Total	75,436	100

Table A.9. Existence of Type C Excavation Sites (for example: river stone, sand, lime, kaolin, quartz sand, clay, etc.)

Description	Number of villages	Percent
Yes	16,927	22.44
No	58,509	77.56
Total	75,436	100

Table A.10. Village Development Category

Description	Number of villages	Percent
Underdeveloped	14,463	1.17
Developing	55,375	73.41
Developed	5,598	7.42
Total	75,436	100

Table A.11. Effect of Instrument Variables on IPD

```
. ivregress 2sls cemar_udara (kat_ipd_mandiri = pdrb_kap tertinggal d_ipd) cemar_ai
> tanah lok_hut mata_air pemukiman_kumuh reboisasi_masy bakar_ladang lok_gali i.spu

First-stage regressions
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                                                Number of obs     =     75,436
                                                F(  17,   75418)  =     105.58
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0232
                                                Adj R-squared     =     0.0230
                                                Root MSE          =     0.2591
```

kat_ipd_mandiri	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cemar_air	.0054479	.0024978	2.18	0.029	.0005522	.0103436
cemar_tanah	.0050105	.0060474	0.83	0.407	-.0068425	.0168635
lok_hut	-.0059986	.0022976	-2.61	0.009	-.0105019	-.0014954
mata_air	.013503	.0022307	6.05	0.000	.0091307	.0178752
pemukiman_kumuh	.0233609	.0042898	5.45	0.000	.0149529	.0317689
reboisasi_masy	.0301171	.0023258	12.95	0.000	.0255585	.0346758
bakar_ladang	-.0336204	.0021616	-15.55	0.000	-.0378573	-.0293836
lok_gali	.0014763	.0023048	0.64	0.522	-.0030412	.0059937
spu						
2	-.0236521	.0124516	-1.90	0.057	-.0480572	.000753
3	.0688668	.0058656	11.74	0.000	.0573702	.0803633
4	.0256855	.0054394	4.72	0.000	.0150243	.0363467
5	-.0086261	.0366748	-0.24	0.814	-.0805086	.0632564
6	.0311763	.0066942	4.66	0.000	.0180557	.044297
7	.0345318	.0116635	2.96	0.003	.0116713	.0573923
pdrb_kap	-.0005563	.0026199	-0.21	0.832	-.0056914	.0045787
tertinggal	-.0479842	.0023886	-20.09	0.000	-.052666	-.0433025
d_ipd	.0002973	.0000923	3.22	0.001	.0001164	.0004781
_cons	.0824759	.0017263	47.78	0.000	.0790923	.0858595

Table A.12. The Effect of IPD on Air Pollution

Instrumental variables (2SLS) regression

Number of obs	=	75,436
Wald chi2(15)	=	3985.06
Prob > chi2	=	0.0000
R-squared	=	.
Root MSE	=	.40689

cemar_udara	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
kat_ipd_mandiri	1.119408	.0772379	14.49	0.000	.9680249	1.270792
cemar_air	.12416	.0039727	31.25	0.000	.1163736	.1319464
cemar_tanah	.294055	.0094983	30.96	0.000	.2754386	.3126713
lok_hut	-.0125099	.0036869	-3.39	0.001	-.019736	-.0052838
mata_air	-.0094778	.0036627	-2.59	0.010	-.0166567	-.002299
pemukiman_kumuh	.0180576	.0069741	2.59	0.010	.0043886	.0317267
reboisasi_masy	-.023248	.0043959	-5.29	0.000	-.0318637	-.0146323
bakar_ladang	.0409539	.0047882	8.55	0.000	.0315691	.0503386
lok_gali	.0160493	.0036178	4.44	0.000	.0089585	.0231401
spu						
2	.023041	.0195698	1.18	0.239	-.0153151	.0613971
3	.0821791	.0107738	7.63	0.000	.0610629	.1032953
4	.0072042	.0087938	0.82	0.413	-.0100313	.0244398
5	.0880358	.0576004	1.53	0.126	-.024859	.2009306
6	-.0139283	.0108107	-1.29	0.198	-.0351168	.0072602
7	-.0119369	.0185409	-0.64	0.520	-.0482763	.0244025
_cons	-.0221194	.0064403	-3.43	0.001	-.0347421	-.0094966

Instrumented: kat_ipd_mandiri
Instruments: cemar_air cemar_tanah lok_hut mata_air pemukiman_kumuh reboisasi_masy bakar_ladang lok_gali 2.spu 3.spu 4.spu 5.spu 6.spu 7.spu pdrb_kap tertinggal d_ipd

Table A.13. The Effect of IPD on Air Pollution (*Ordinary Least Square*)

```
. reg cemar_udara kat_ipd_mandiri cemar_tanah lok_hut mata_air pemukiman_kumuh reboisasi_ma
> sy bakar_ladang lok_gali i.spu
```

Source	SS	df	MS
Model	433.461818	14	30.9615584
Residual	6583.81084	75,421	.087294133
Total	7017.27265	75,435	.093024096

Number of obs	=	75,436
F(14, 75421)	=	354.68
Prob > F	=	0.0000
R-squared	=	0.0618
Adj R-squared	=	0.0616
Root MSE	=	.29546

cemar_udara	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
kat_ipd_mandiri	.0272433	.004141	6.58	0.000	.0191271	.0353596
cemar_tanah	.3634672	.0067501	53.85	0.000	.3502371	.3766974
lok_hut	-.0301072	.0025762	-11.69	0.000	-.0351565	-.0250578
mata_air	.004528	.0025327	1.79	0.074	-.0004361	.0094922
pemukiman_kumuh	.0661079	.0048695	13.58	0.000	.0565638	.0756521
reboisasi_masy	.0128557	.0026512	4.85	0.000	.0076594	.0180521
bakar_ladang	-.0094359	.0023632	-3.99	0.000	-.0140678	-.004804
lok_gali	.0218377	.0026241	8.32	0.000	.0166945	.026981
spu						
2	.0461708	.0141573	3.26	0.001	.0184226	.073919
3	.1917323	.0066428	28.86	0.000	.1787124	.2047522
4	.05464	.0061896	8.83	0.000	.0425085	.0667715
5	.0843087	.0418214	2.02	0.044	.0023391	.1662784
6	.034675	.0076219	4.55	0.000	.0197361	.0496138
7	.0408767	.0132982	3.07	0.002	.0148123	.0669411
_cons	.0828386	.0017813	46.50	0.000	.0793472	.0863299

Table A.14. Classic assumption test

```
. swilk e

                   Shapiro-Wilk W test for normal data

    Variable |        Obs       W           V         z       Prob>z
-------------+------------------------------------------------------
      embung |     75,436    0.75119    6229.364    24.390    0.00000
Note: The normal approximation to the sampling distribution of W'
      is valid for 4<=n<=2000.

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of cemar_udara

         chi2(1)      =  6808.41
         Prob > chi2  =   0.0000

. estat vif

    Variable |       VIF       1/VIF
-------------+----------------------
kat_ipd_ma~i |      1.02    0.982281
 cemar_tanah |      1.01    0.990288
     lok_hut |      1.12    0.894965
    mata_air |      1.06    0.945648
pemukiman_~h |      1.04    0.963942
reboisasi_~y |      1.04    0.964500
bakar_ladang |      1.12    0.891892
    lok_gali |      1.04    0.965599
         spu |
          2  |      1.01    0.993420
          3  |      1.03    0.972596
          4  |      1.04    0.964296
          5  |      1.00    0.998865
          6  |      1.02    0.980513
          7  |      1.00    0.995823
-------------+----------------------
    Mean VIF |      1.04
```

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