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**ANALYSIS OF INDICATOR OF RURAL DEVELOPMENT INDEX  
(CASE STUDY VILLAGE IN MAGELANG REGENCY 2014-2018)**

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**ABSTRACT**

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One of the target found in RPJMN 2015 – 2019 is to decrease the amount of backward village up to 5.000 and increase the amount of independent village up to 2.000. Therefore BPS and BAPPENAS issued a measuring instrument called Rural Development Index (RDI) that describes the level of progress or development of the village at a time (BPS, 2018). Magelang Regency is one of 4 regencies in Central Java which become a pilot innovation village in national level. The aims of this research are (1) to find out the description of RDI and (2) to find out the factors that influence the up and down of RDI. This research uses RDI measurement method issued by BPS and BAPPENAS in 2014. This method uses 42 indicators divided into 5 dimensions: (1) basic services; (2) infrastructure conditions; (3) accessibility/ transportation; (4) public services; and (5) governmental administration. The result shows that the RDI score in Magelang Regency in 2014 – 2018 increased even just 0,05. In 2014, RDI is at 64,24 and increased to 64,29 in 2018. Rural development is expected to empowering the community when the Rural Government making the development policy so it can be accordance with what the community needs.

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**1. INTRODUCTION**

The National Medium-Term Development Plan (RPJMN) is a 5-year national development plan for one period of office of a president. The 2015-2019 RPJMN contains one of the achievement targets related to the development of villages and rural areas, namely reducing the number of underdeveloped villages to 5,000 villages and increasing independent villages to a minimum of 2,000 villages (Kementerian PPN/Bappenas, 2019).

To find out the classification of villages based on their independence, BAPPENAS and BPS issued a measurement called the Rural Development Index (RDI) which describes the level of village progress or development at a time (Badan Pusat Statistik, 2018). Regional development rural carried out with the aim of reducing the inequality that occurs between villages and cities in various aspects. RDI consists of 42 indicators which are then divided into 5 dimensions, namely: 1) Basic services; 2) Infrastructure condition; 3) Accessibility/transportation; 4) Public services; and 5) Administration of government (Harmadi et al., 2020).

Based on table 1 below, Java – Bali Island is an island with the highest RDI score among other islands in Indonesia. In fact, the average RDI in Java - Bali (67.82) is higher than that of Indonesia (59.36). This shows that village development in Java Island is faster than other islands. The Special Region of Yogyakarta (73.32) occupies the first position in the Village RDI on the Island of Java – Bali, which is then followed by the Province of Bali (70.97) in the second position. In third place is West Java Province with an RDI of 69.78. Central Java ranks fourth with an RDI of 67.37, followed by East Java Province with 66.88, and finally Banten Province with an RDI of 64.80. Of the six provinces in Java - Bali, Central Java has the highest number of villages with a total of 7,809 in 2014 and 2018. Central Java with an RDI in 2018 of 67.37, where this figure increased by 2.34% from 2014, was able to increase the number of independent and developing villages and reduce the number of underdeveloped villages. Independent villages in Central Java increased by 468 villages so that in 2018 the number of independent villages in Central Java became 1,133 villages or 14.51% of the total number of villages. The increase in the number of independent villages is also accompanied by a decrease in the number of developing villages and underdeveloped villages in Central Java. In 2014 the number of developing villages in Central Java was 7,021, decreasing to 6,632 in 2018. For underdeveloped villages, there was a decrease of 79 villages to 44 underdeveloped villages in 2018 (Yulitasari, Tyas, 2020).

Table 1. Rural Development Index by Island

Islands	RDI	
	2014	2018
Papua	32.05	35.57
Maluku	46.89	52
Kalimantan	52.41	56.66
Nusa Tenggara	52.46	56.25
Indonesia	55.71	59.36
Sumatera	55.87	60.02
Sulawesi	56.38	60.63
Java - Bali	65.03	67.82
Indonesia	55.71	67.82

Source: Badan Pusat Statistik (2018); Kementerian PPN/Bappenas & BPS (2015)

Deputy Governor of Central Java, Taj Yasin Maimoen, stated that as many as 4 out of 35 regencies/cities in Central Java Province succeeded in becoming pilot innovative villages and ranked in the top 10 innovative villages national (Humas Jateng, 2019). The four districts that have become national-level village innovation pilots are Banyumas Regency, Purbalingga Regency, Rembang Regency, and Magelang Regency (Nugroho, 2019). Of the four districts, Magelang Regency is the district that has the largest number of villages and sub-districts, namely 367 villages and 5 sub-districts. With a large number of villages, Magelang Regency is successful increase RDI score from 2014 to 2018. Magelang Regency's RDI score increased by 4.04 points from 62.30 in 2014 to 66.34 in 2018. However, based on the table 2 below, the RDI score in Magelang Regency as a whole is still lower compared to Central Java, both in 2014 and 2018.

Table 2. Magelang Regency RDI

RDI Dimensions	YEAR	
	2014	2018
Basic Services	66.75	67.51
Infrastructure Condition	44.95	48.45
Accessibility/ Transportation	79.22	83.09
Public service	52.52	57.05
Administration of Government	67.30	82.22
RDI	62.30	66.34

Source: Badan Pusat Statistik (2018); Kementerian PPN/Bappenas & BPS (2015)

## 2. RESEARCH METHODS

This research uses the method study The Rural Development Index formulated by Kementerian PPN/Bappenas & BPS (2015), uses 5 dimensions which are then translated into 42 indicators. The results of this study reveal the value of the Rural Development Index which shows how far the development of the village development used as the sample is. The data is in the form of secondary data obtained from the relevant offices and agencies from 2014 to 2018.

The number of samples used in this study were 36 villages out of a total of 367 villages in Magelang Regency. The sample is divided into 3 regions, namely mountainous, rural, and Suburbans with 12 samples for each region. Of the 42 existing indicators, each indicator then shared into indicator scores that have a range of 0-5 based on the criteria of each indicator. The score of the indicator is then multiplied by the scale that has been set by Kementerian PPN/Bappenas & BPS (2015).

Table 3. Amount of Counterweight for Each RDI Compiler Indicator

Dimensions	Variable	Indicator	Scale
Basic Services (0.326)	Service Education (0.098)	1) Availability and access to TK/RA/BA	0.0227852
		2) Availability and access to elementary schools	0.0115521
		3) Availability and access to junior secondary schools	0.0320783
		4) Availability and access to SMA equivalent	0.0317407
	Service Health (0.228)	5) Availability and ease of access to the Hospital	0.027163
		6) Availability and ease of access to Maternity Hospital	0.0258106
		7) Availability and ease of access to the Health Center	0.0310473
		8) Availability and ease of access to the Polyclinic/ Ward Treatment	0.0308963
		9) Availability and ease of access to the Doctor's Office	0.0325841
		10) Availability and ease of access to Midwife Practice Place	0.0299338
		11) Availability and ease of access to Poskesdes or Polindes	0.0252111
		12) Availability and ease of access to the Pharmacy	0.0253566
Condition Infrastructure (0.252)	Economic Infrastructure (0.094)	13) Availability to Shops. Mini Market. or Grocery Store	0.0196165
		14) Availability to Market	0.0179773
		15) Availability to Restaurant. House Eat or Warung/ Restaurant	0.0152138
		16) Availability to Hotel or Lodging Accommodation	0.0186228
		17) Bank Availability	0.0229853
	Infrastructure Energy (0.051)	18) Electrification	0.0140417
		19) Lighting Conditions on the Main Street	0.0188277
		20) Fuel for Cooking	0.0177782
	Health Infrastructure and sanitation (0.074)	21) Water Source for Drink	0.0299481
		22) Water Source for Shower/ Wash	0.030138
		23) Toilet Facilities Big	0.0137127

Dimensions	Variable		Indicator	Scale
Accessibility/Transportation (0.204)	Communication Infrastructure and Information (0.033)	24)	Availability and Facility Quality Mobile Communications	0.0160403
		25)	Availability of Internet Facilities and Postal or Goods Delivery	0.0172964
	Means Transportation (0.117)	26)	Traffic and Road Quality	0.0174274
		27)	Road Accessibility	0.0149853
		28)	Availability of Public Transport	0.0426582
	Transportation Accessibility (0.086)	30)	Travel Time per Kilometers of Transportation to the District Office	0.0422595
			31)	Cost per Kilometer of Transportation to the District Office
		32)	Travel Time per Kilometers of Transportation to the Regent's Office	0.0280166
			33)	Cost per Kilometer of Transportation to the Regent's Office
		33)	Cost per Kilometer of Transportation to the Regent's Office	0.0264609
Service General (0.109)	Health Society (0.040)	34)	CLB handling	0.0195116
		35)	Management of Malnutrition	0.0209339
	Sport (0.069)	36)	Availability of Sports Facilities	0.0334978
		37)	Existence of Sports Activities Group	0.0351981
Administration of Government (0.109)	Independence (0.062)	38)	Equipment Village government	0.0260184
		39)	Village Autonomy	0.0163094
		40)	Village Assets/Wealth	0.0198562
	Quality HR (0.047)	41)	Village Head HR Quality	0.0186415
		42)	Village Secretary HR quality	0.0279371

Source: Badan Pusat Statistik (2018); Kementerian PPN/Bappenas & BPS (2015)

The indicator score for each indicator is then multiplied by the RDI weighing value. Then the multiplication result is calculated using the following formula to get the RDI value:

$$IPD\ 2014 = \left( \frac{(b1*V1+b2*V2+b3*V3+...+b42*V42)}{b1+b2+b3+...+b42} \right) * 20$$

Where as:

IPD = RDI value of each village (value 1 - 100)

V1 = Indicator score – 1

V2 = Indicator score – 2

V42 = Indicator score – 42

B1 = Weighting to – 1

B2 = Weighting to – 2

B42 = the 42nd scale/weight

RDI value has span 0 – 100 by grouping into 3 categories (Irawati et al., 2020), namely: Independent villages ( $RDI > 75$ ), Developing villages ( $50 < RDI \leq 75$ ), and Underdeveloped villages ( $RDI \leq 50$ ). Region is a spatial unit based on a similarity, both geographical, administrative and functional conditions (Hardati, 2016). In this study the authors divided the study area into 3 regions, namely mountains - rural - Suburbans which are included in the division of functional areas because the villages in each region have the same topographical characteristics.

### 3. RESULTS AND DISCUSSION

#### Descriptive Statistics

Magelang Regency is one of the regencies in Central Java with an area of approximately 1,085.73 KM2 with 367 villages and 5 sub-districts divided into 21 districts. With an altitude between 153 mdpl – 3,065 mdpl, Magelang Regency has an average air temperature of around 25.62°C and humidity around 82%. The geographical location of Magelang Regency is directly adjacent to Temanggung Regency and Semarang Regency to the north, Semarang Regency and Boyolali Regency to the east, Purworejo Regency and DIY Province to the south, Temanggung Regency and Wonosobo Regency to the west, and Magelang City in the central part of the district. Meanwhile, based on astronomical location, Magelang Regency is located at 110° 01' 51" and 110° 26' 58" BT and 7° 19' 13" and 7° 42' 16" LS (Badan Pusat Statistik Kabupaten Magelang, 2014).

In 2018, the population of Magelang Regency is 1,279,625 people with a population density of 1,179 people/km2. Growth The economy in Magelang Regency was at 5.06 in 2017 and increased by 0.37 to 5.43 in 2018. For the GRDP figure based on price happen from 2014 to 2018 there has been a significant increase. In 2014 ADHB GRDP amounted to IDR 21,923,411,310, 2015 amounted to IDR 24,148,644,160, 2016 amounted to IDR 26,232,349,050, 2017 amounted to IDR 28,128,954,010, and in 2018 amounted to IDR 30,324,065,470. while for GRDP at constant prices in 2014 ADHK GRDP amounted to IDR 17,936,295,380, 2015 amounted to 18,864,651,970, 2016 amounted to IDR 19,882,244,240, 2017 amounted to 20,937,301,010, and in 2018 amounted to 22,074,995,900 with a year of 2010 as the basis.

#### Mountains

Mountainous areas have lower air temperatures due to their higher location compared to other areas with altitudes above 500 meters above sea level. Residents in mountainous areas tend to work as farmers due to the favorable air temperature and soil type. In table 4 it is explained that from 2014 to 2018 RDI in mountainous areas tends to increase. Even though 2016 had decreased, the RDI value increased again in 2017. Of the 5 dimensions, 2 of them experienced a decrease and 3 others increased.

The basic service dimension has decreased because the number of facilities tends to remain the same, even though the population continues to increase which affects the decline in the value of the indicator. Meanwhile, the accessibility/transportation dimension experienced a decline because several transports stopped operating because they only had a few passengers. For the 3 dimensions that have increased, namely the dimensions of infrastructure conditions, public services, and government administration. The dimension of infrastructure conditions tends to increase because the facilities in the economic infrastructure variables and communication and information infrastructure tend to increase. For the public service dimension, the increase tends to be due to the addition of sports facilities. Meanwhile, for the dimensions of governance, the increase in the RDI score was due to the fact that many villages began to fill the vacant position of Village Secretary in 2017.

Table 4. RDI in Mountains Area

Dimensions	Year				
	2014	2018	2016	2017	2018
1) Basic Services	65.09	64.92	64.79	64.80	64.80
2) Infrastructure Condition	41.55	41.80	42.01	43.36	43.59
3) Accessibility/ Transportation	77.08	77.08	77.08	74.65	74.65
4) Public service	50.13	50.13	50.13	50.64	50.64
5) Governance	64.48	64.59	62.79	69.16	70.05
RDI	59.90	59.92	59.73	60.33	60.48

Source: Processed data, 2020

## Rural

Rural areas are in lowland areas and have flat topography. This area is usually at an altitude of about 200 meters above sea level to 500 meters above sea level with an average temperature of 28°C - 35°C. Communities in this area tend to have heterogeneous livelihoods, ranging from traders, employees, farmers, and so on. Table 5 shows that of the 5 dimensions, 2 have decreased, 2 have increased, and 1 dimension is constant.

The dimensions that have decreased are basic services and government administration. The basic service dimension has decreased due to the number of facilities and increased while the population continued to increase. Meanwhile, the dimension of government administration has decreased due to a decrease in the percentage of PADes to total Village Income. For dimensions that have increased, namely the condition of infrastructure and public services. On the condition dimension infrastructure, the increase tends to be influenced by the increase in communication and information infrastructure, while for the general service dimension the increase is influenced by the increase in facilities sport in several villages.

Table 5. RDI in Rural Area

Dimensions	Year				
	2014	2018	2016	2017	2018
1) Basic Services	73.58	73.43	73.43	73.38	73.38
2) Infrastructure Condition	50.30	50.40	51.42	51.92	52.53
3) Accessibility/ Transportation	84.03	84.03	84.03	84.03	84.03
4) Public service	49.03	49.03	49.57	50.08	51.13
5) Governance	70.36	68.86	67.86	70.96	70.21
RDI	66.81	66.62	66.83	67.33	67.52

Source: Processed data, 2020

## Suburbans

The suburban area is at an altitude between 200 mdpl – 500 mdpl with an average temperature of around 28°C – 35°C. The topography of this area tends to be flat and is located on the Suburbans or borders of the area. This area usually has roads raya which is good enough so that it has advantages in road access. RDI values in this region tend to decrease. Table 6 shows the RDI values in the suburbs. Of the 5 dimensions, there are 3 dimensions that have decreased and the other 2 have increased.

The dimensions that have decreased are basic services, accessibility/transportation, and administration of government. Basic services decreased because there were auxiliary health centers closed because they were in the renovation stage, besides that several doctors' practices and midwives' practices were also closed. Dimensions accessibility/transportation has decreased due to transportation that has stopped operating due to reduced passengers. The dimension of government administration tends to decrease due to the decrease in the percentage of PADes to total Village Income. The 2 dimensions that experienced an increase were the condition of infrastructure and public services. The dimension of infrastructure conditions tends to increase due to the increasing number of food stalls and several villages start installing internet facilities at the village head's office. Whereas the dimension of public services tends to increase due to the addition of sports facilities in several villages.

Table 6. RDI in Suburban Area

Dimensions	Year				
	2014	2018	2016	2017	2018
1) Basic Services	71.64	71.30	70.66	70.50	70.51
2) Infrastructure Condition	46.66	46.53	46.36	46.81	48.30

Dimensions	Year				
	2014	2018	2016	2017	2018
3) Accessibility/ Transportation	84.03	84.03	81.60	81.60	79.17
4) Public service	51.61	51.61	51.49	52.02	52.56
5) Governance	74.82	73.57	71.57	72.35	71.85
RDI	66.02	65.74	64.77	64.97	64.86

Source: Processed data, 2020

### Comparison of Rural Development Index between Areas

Table 7 illustrates the comparison of RDI between areas, namely mountains, rural, and Suburbans. It can be seen that from 2014 to 2018, RDI in mountainous areas has always been the RDI with the lowest index value, followed by suburban areas, and finally rural areas which have the highest RDI values of the three regions. Rural areas have the highest RDI scores because rural areas have more facilities and have easier access compared to other regions.

Table 7. Comparison of RDI between Areas

Areas	Year				
	2014	2018	2016	2017	2018
Mountains	59.9	59.92	59.73	60.33	60.48
Rural	66.81	66.62	66.83	67.33	67.52
Suburban	66.02	65.74	64.77	64.97	64.86
Average	64.24	64.09	63.78	64.21	64.29

Source: Processed data, 2020

## 4. CONCLUSION

Based on the results obtained in the previous chapter, it is known that rural areas have the highest RDI values and mountainous areas have the lowest RDI values. Rural areas have better facilities and access compared to other areas, regions mountains has sufficient facilities but arguably not optimal because there are still many deficiencies in terms of facilities communication and information, transportation, and education, while sub urban areas have adequate facilities and access but there are still deficiencies in terms of communication and information facilities. For more details, it can be concluded that Mountainous areas have the lowest RDI scores compared to rural areas and suburban areas. Of the total twelve villages sampled, all villages were in the developing category from 2014 to 2018. The average index value was between 59 and 60. In 2014 the index value was 59.90 and only increased by 0.58 in 2018 to 60.48. This indicates that not much has changed in area mountains in five years. Even though five years is enough time if it is used to carry out development to improve the quality of the village. The dimensions that help increase the value of RDI in mountainous areas are the dimensions of infrastructure conditions, dimensions of public services, and dimensions of government administration, although there is no significant increase.

Rural areas have the highest RDI scores compared to mountainous and suburban areas. From a total of twelve villages sampled, from 2014 to 2017 there were two villages in the independent category and an increase of one village to three villages in the independent category in 2018. The index value in 2014 was at 66.75 and increased by 0.77 to 67.52 in 2018. One of the factors that caused the region rural has the highest RDI value due to the strategic location of rural areas in the middle of the region and easy to reach so that this area has advantages in terms of ease of access compared to other blood groups.

Peripheral areas have relatively decreased RDI values each year. From 2014 to 2018 the index value continued to experience a significant decline. In 2014 RDI was at 66.02 and decreased by 1.16 to 64.86. This decrease is a fairly large number. Of the 12 villages that were sampled, from 2014 to 2018 there were eleven villages in the developing category and one village in the independent category.

One of the reasons for the decline in the RDI score in suburban areas was due to a decrease in the index in the dimensions of basic services, accessibility/transportation, and administration of government. The closure of the puskesmas, the closing of the doctor's practice, the public transportation that is no longer operating, and the decreasing percentage PAD to the total Village income each year causing the RDI value to continue to decrease every year.

## 5. REFERENCES

- Badan Pusat Statistik. (2018). *Indeks Pembangunan Desa 2018*. Jakarta: Badan Pusat Statistik Indonesia.
- Badan Pusat Statistik Kabupaten Magelang. (2014). *Kabupaten Magelang dalam Angka 2014*. Jakarta: Badan Pusat Statistik Kabupaten Magelang.
- Hardati, P. (2016). Hierarki Pusat Pelayanan di Kecamatan Ungaran Barat dan Ungaran Timur Kabupaten Semarang. *Jurnal Geografi: Media Informasi Pengembangan n Ilmu Dan Profesi Kegeografian*, 13(2), 204–224.
- Harmadi, S. H. B., Suchaini, U., & Adji, A. (2020). *Indikator Pembangunan desa di Indonesia: Ditinjau dari Ketidakesesuaian Indikator Pembangunan Desa* (TNP2K Working Paper 51-2020; Februari 2020).
- Humas Jateng. (2019). *Empat Kabupaten Masuk 10 Besar Inovasi Desa, Wagub: Semoga Menjadi Percontohan Desa di Indonesia*.
- Irawati, H., Wicaksono, A. D., & Prayitno, G. (2020). Klasifikasi Desa Berdasarkan Tingkat Kemajuan Desa (Studi Kasus Kecamatan Pujon Kabupaten Malang). *Planning for Urban Region and Environment*, 9(2), 59–66.
- Kementerian PPN/Bappenas. (2019). *Evaluasi Akhir RPJMN 2015-2019: Mewujudkan Indonesia yang Berdaulat, Mandiri, dan Berkepribadian*. Jakarta: Kementerian Perencanaan Pembangunan Nasional / Badan Perencanaan Pembangunan Nasional.
- Kementerian PPN/Bappenas & BPS. (2015). *Indeks Pembangunan Desa 2014: Tantangan Pemenuhan Standar Pelayanan Minimum Desa*. Jakarta: Kementerian Perencanaan Pembangunan Nasional / Badan Perencanaan Pembangunan Nasional dan Badan Pusat Statistik.
- Nugroho, W. A. (2019). *4 kabupaten di Jawa Tengah jadi percontohan inovasi desa nasional*. Antara News. <https://www.antarane.ws.com/berita/1149320/4-kabupaten-di-jawa-tengah-jadi-percontohan-inovasi-desa-nasional>
- Yulitasari, Tyas, W. P. (2020). Dana Desa dan Status Desa di Provinsi Jawa Tengah. *Journal of Regional and Rural Development Planning*, 4(2), 74–83.