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### The Macrotheme Review

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#### THE MACROTHEME REVIEW

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## Contents

Articles	page
Approaches to measure quality of human resource development index in the village context: case of Central Java, Indonesia Mulyanto and Habibullah Magsi	1-17
Abrogation of the Russian-American Trade Treaty of 1832 and the U.S. Press Ekaterina V. Fedorova	18-37
TAXONOMY OF DOWNSTREAM OIL MARKET DEREGULATION AND SUBSIDISATION: THEORETICAL ISSUES Sabiu Bariki Sani	38-48
Innovative methods for evaluating the performance and development of business clusters  Makhmudzoda Peruzai Mukhiddini and Rustam Bobojonov	49-57
The attributes of stakeholders regarding accounting for oil and gas upstream activities in Libya Ibrahim Eldanfour, Alhussien Elseraiti and Ibrahim Ali Abushaiba	58-65
The Relationship between National Culture and Organisational Culture: Case of Medium and Large Size Organisations in Iran Alireza Nazarian Peter Atkinson and Lyn Greaves	66-78
The Pathology of human society against the onslaught of uncontrollable transformation in the world today Mohammad Mahmoudi	79-93
BIG DATA CHARACTERISTICS Peter Géczy	94-104
Good Governance Framework: A Guide to a Successful Joint Development Zone Sani Saidu	105-115
Impacts of Employment Opportunities within the Nigeria São Tomé and Príncipe Joint Development Zone Sani Saidu	116-123

#### The Macrotheme Review

A multidisciplinary journal of global macro trends

Approaches to measure quality of human resource development index in the village context: case of Central Java, Indonesia <sup>1</sup>

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#### **Abstract**

This study was attempted to develop the model for measuring human development progress at village level by using an index system, namely Index of Human Resources Development for Villages (IHRDV). For this study four Regencies in Central Java Province were chosen as a pilot project, i.e. Wonogiri, Klaten, Sragen and Sukoharjo. IHRDV is composed over health, education and economic indicators. Each indicator consists of some variables derived from secondary data, where simple average method is applied to construct the model. Meanwhile, correlation of product moment and analyses of variance were used to analyze the differences of IHRDV. As results education indicator gives biggest contribution, while economic indicator provides smallest contribution to the IHRDV, while in Suhoharjo, health indicator gives smallest contribution to the IHRDV. There are some differences result if the IHRDV is correlated. The economic indicator has biggest correlation with the IHRDV in Klaten and Sragen, where education indicator has biggest correlation with the IHRDV in Wonogiri, and health indicator in Sukoharjo. With the 10 percent level of significance, only Klaten found having no significance while testing one-way analysis of variance in related with the differences of villages typologies. It implies that there are not differences among the IHRDV viewed by the differences of villages typologies. Through this study we would like to provide the value of IHRDV in average for the villages with rice cultivated area have the highest score compared with the others in Wonogiri, while villages with crops planted area have the highest score compared with the others in Klaten. While, the villages with manufacturing industry have highest score in Sukoharjo. Thus it is concluded that the effort to constructing the model for measuring progress of human development in the villages context has a big role in Indonesia for achieving a good condition in the future time. It is important to understand because in the villages, the public services are begun and never ending up to now.

Keywords: Development; Index; IHRDV; Central Java; Indonesia

JEL Classification: R12, R58

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<sup>&</sup>lt;sup>1</sup> First version of this article has been presented in 23rd Pacific Conference of the Regional Science Association International (RSAI) and the 4th Indonesian Regional Science (IRSA) Institute, Bandung – Indonesia during 2-4 July 2013. Authors can be contacted: yanto.mul@gmail.com & magsihabib@gmail.com

#### 1. Introduction

It is commonly believed that Gross Domestic Product (GDP) per capita is not a perfect measure of development progress in many countries in the world, irrespective of whether it is adjusted for purchasing power differences among countries or not (see Ogwang, 1997; Wang, 2007; Zgurovsky, 2007). As a consequence, researchers have devoted much effort to develop composite indices of development progress. For examples, Morris (1979) had developed the composite indices called by the Physical Quality of Life Index (PQLI). This effort was continued by Mahbub ul Haq (UNDP, 2006) by using the composed indices called by the Human Development Index (HDI) in 1990s.

As an ilustratiton, the results of macro-level indicators of development in Indonesia, especially when compared with other countries shows that of the 14 kinds of development indicators, the most prominent ranking in Indonesia is an indicator of the population, ranks 4th out of 237 countries, with a number of population in the year 2010 about 237.6 million (Statistics Indonesia, 2012). On the other hand, a large number of population are not proportional to the level of prosperity of the population and the quality of human resources. Gross Domestic Product (GDP) per capita as reflection of the level of prosperity of nation, can be classified into the low category, amounting to US \$4,300, and ranks 154 out of 237 countries. Condition of the human quality of development indicated by the Human Development Index (HDI) is also classified into low category, and ranks 108 out of 169 countries. Description of the data and indicators can be seen in Table 1.

On the other hand, national development policy in related with the field of regional development among others, is aimed to reduce the gap of development among the villages in Indonesia. As we know the numbers of villages in Indonesia in 2009 are about 77.012 villages which are distributed into 6.652 subdistricts, 98 cities, and 399 regencies (Badan Pusat Statistik (BPS) / Statistic Indonesia, 2012). With a growing number of villages, it should be followed by the increasing of quality in managing the development in the villages. It is important to understand because in the villages, the public services are begun and never ending up to now.

Table 1: Ranks and Position of Several Indicators of Development in Indonesia Compared with the Others Countries in the World

No.	Indicators of Development in Indonesia	Rank of Indonesia	No. of Countries Observed
01.	Global Competitive Index (Year 2010-2011)	44	139
02.	Infrastructure (Year 2010-2011)	82	139
03.	Health and Primary Education (Year 2010-2011)	62	139
04.	Infant Mortality Rate (Year 2010-2011)	97	139
05.	Life Expectancy Rate (Year 2010-2011)	91	139
06.	Quality of Basic Education(Year 2010-2011)	55	139
07.	Human Development Index (Year 2010)	108	169
08.	Corruption Perception Index/ CPI (Year 2010)	110	178
09.	State Failure Risk(Year 2010)	61	178
10.	Education Development Index (Year 2010)	65	128
11.	Population 237,6 milliun (Year 2010)	4	237
12.	GDP US\$ 1.033 billiun (Year 2010)	16	237
13.	GDP Per Capita US\$ 4,300 (Year 2010)	154	237
14.	unemployment 7,1% (Year 2010)	75	237

Source: Adobted from Roberto Akyuwen, 2011.

In related with the above condition, the objectives of this study were: (i) to construct the Index of Human Resources Development for Villages (IHRDV) as an instrument for measuring the progress of human resources development for the villages, (ii) to test the degree of correlation between the IHRDV and its indicators constructing the IHRDV, and finally (iii) to know the difference of IHRDV in average if the villages are distinguished by type of the villages typologies. This paper is classified into six sections. Section II explains about the previous studies, where section III devoted to IHRDV model explanation and selection strategies of indicators. In Section IV we describe about methodological consideration and data collection procedure. Section V comprised over result of the study, and finally we provide conclusion and policy prospects.

#### 2. Literature reviewed

In 1970s, Morris (1979) used two main indicators, namely health indicator and education indicator to measuring the achievement of human resources development. Both of these indicators were measured by infant mortality rates, life expectancy at age one, and literacy

percentage rates. Meanwhile, Mahbub ul Haq in 1990s (UNDP, 2006) had also developed the Morris's model by adding other indicator, namely the income indicator indicated by the GDP corrected by Purchasing Power Parity (PPP). In recent years, there are also a lot of composite indices for measuring the progress of development in the specific area. For examples: Indicators of Good Governance (IGG) developed by Philippine Institute for Development Studies (1999); Regional Attractiveness Index (RAI) constructed by the Price-Water-houseCooper (2001); Urban Governance Index (UGI) arranged by UN-HABITAT (2002) for the Global Campaign on Urban Governance; Environmental Sustainability Index (ESI) developed by Yale University (2005); Indicators of Sustainability Development (ISD) constructed by United Nations (2007); and also the Vulnerability and Resilience Index (VRI) developed by Malta University (2008).

For measuring and evaluating the progress of development in provinces level in People's Republic of China (PRC), Wang (2007) had developed the index system called by a Regional Development Index (RDI). In this study, Wang used ten field indices (and one reference index) to measure the regional development in different fields. They were: (i) Level of economic development; (ii) Productivity and Research & Development; (iii) Human development; (iv) Education; (v) Social equity; (vi) Public services; (vii) Social security; (viii) Infrastructure; (ix) Environment protection; (x) Institutional development; and (xi) Natural resources and geographic location (reference index). Wang (2007) would like to get proof that regional disparities in the PRC were the result of a combination of geographic location, economic policy, and others factors such as infrastructural conditions as be found by economists in the previous studies.

On the other hand, BAPPENAS (Indonesian Planning Agency) in 1991 had also constructed a Regional Development Index (RDI). This RDI was developed to measuring the regional development in 26 provinces in Indonesia by using secondary data in years 1994, 1996 and 1998. This study was done before the program of regional autonomy has been implemented in Indonesia since 2001. BAPPENAS used three indicators to construct he RDI, namely: (i) Indicator of government's capacity and capability; (ii) Indicator of regional development; and (iii) Indicator of public empowerment. Each of indicators was derived into three Sub Indicators. By using the RDI, progress and evaluation on regional development can be measured and evaluated together, so the RDI can provides to us some useful information about the progress of regional development at the provincial level or the others level. This study wants to develop the RDI model that had been developed by Wang (2007) and Bappenas (2001) for the contect of village government by doing adjustment to some indicators and variables used in this study.

Khalifa and Connelly (2009) had also constructed Local Indicators of Sustainable Development and Local Human Development Index in the case of rural in Egypt. They used five indicators and 12 sub-indicators to get guideline for evaluating the criteria for the success of rural development. Similarily, Emilija and Meyers (2010) also had implemented the the assessment for measuring the regional indicators for the development of the villages in Lithuania. They used four aspects, then derived into nine indicators. besides that there are also suggestions regarding inconcistnece for Human Development Index (Herrero et al. 2012).

There are still some inconsistencies in the new construction that have to be addressed (in particular, the use of a composite variable to approach educational achievements, the use of logs for the income variable and the type of normalization adopted). We discuss in this paper those inconsistencies and suggest some relatively minor changes that would suffice to avoid them.

In general, we have been inspired through the available literature by doing the adaptation and adjustment in accordance with the availability of data in the villages where the study was conducted

#### 3. IHRDV and Indicator Selection Strategy

The IHRDV is constructed by using a simple average method from three indicators, namely: (i) Health Indicators, (ii) Education Indicators, and (iii) Economic Indicators. Each of three indicators directly presents a certain field of development in the village government, and they together constitute the overall index (IHRDV). Each indicator consists of several variables, which are based on one or more basic secondary data available in the document of sub district in the figures published by BPS (Statistics Indonesia) in Year 2011. Technical explanation of the indicators and several variables used in this study can be described as follow:

#### 3.1. Health Indicators

- Ratio of the number of health facilities to the number of population times by 1,000
- Ratio of the number of medical staff to the number of population times by 1,000
- Percentage of the number of toilet ownership by family to the number of households
- Infant bird rate per 1.000
- Infant mortality rate per 1,000

#### 3.2. Education Indicators

- Ratio of the number of primary school building to the number of pupils times by 100
- Ratio of the number of pupils to the number of teachers in primary school level
- Ratio of the number of pupils in primary school to the number of school age population 7-12 years times by 100
- Percentage of population with educational attainment in senior high school and over to number of population age 5 year over

#### 3.3. Economic Indicators

• Ratio of the number of trading and finance facilities to the number of population times by 1,000

- Ratio of the number of micro, small and medium enterprises to the number of population times by 1,000
- Percentage of the number of employment in agriculture sector to the total number of employment
- Percentage of the number of employment in industry sector to the total number of employment
- The number of cars and motorcycles to the number of households times by 100
- Ratio of length of roads asphalted to the total number of length of roads times by 100
- Ratio the total number of length of roads to the land area of village
- Ratio the number of telecomunication facilities to the number of house-holds times by 100

#### 4. Data and Methodology

For constructing the IHRDV as an instrument for measuring the progress of villages development in Indonesia, about 985 villages were selected from four regencies. The specific areas used in this study is detailed as follows: (i) Wonogiri Regency (248 Villages, 25 Subdistricts), (ii) Klaten Regency (391 Villages, 26 Subdistricts), (iii) Sragen Regency (196 Villages, 20 Subdistricts), and (iv) Sukoharjo Regency (150 Villages, 12 Subdistricts) (see Figure 1). The method for choosing these areas using the concept of Klassen Typology. The data used in this study was scondary data publised by BPS (Statistics Indonesia) in the year of 2011.

According to BPS (2008) in the survey of villages potential data, villages in Soloraya areas could be classified into 10 (ten) villages classification, namely: (i) Paddy/rice planted area villages; (ii) Crops planted area villages; (iii) Horticulture villages; (iv) Plantation villages; (v) Animal / husbandry villages; (vi) Forestry villages; (vii) Mining and quarrying villages; (viii) Manufacturing industry villages; (ix) Trade, retail and restaurant villages; and finally (x) Services villages.

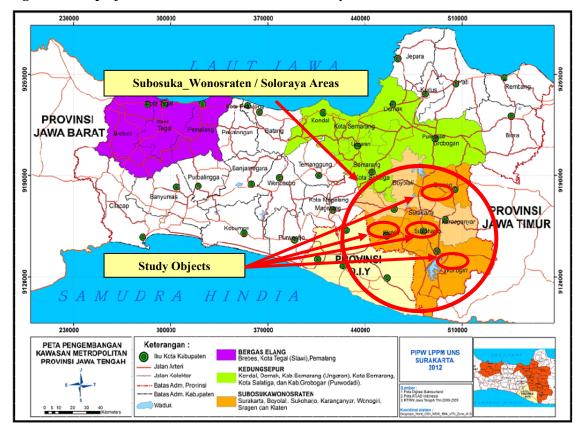


Figure 1: Map of Subosuka Wonosraten or Soloraya Areas, Central Java Province – Indonesia

In this study, the index system for constructing the IHRDV have been developed similar (some extent) to Wang's (2007) Regional Development Index (RDI) in China. In order to derive the aggregation of field indices and the overall index, data need to be normalized, so all basic indicators are transformed into a 0-10 score. The scores between 0 and 10 indicates the positions of the relevant villages at lowest and highest levels of village development. For positive indicators (greater numbers reflect higher level of development), the scores are calculated using the following formula (Agarwal and Samanta, 2006; and Wang, 2007):

$$I^{th}Village = \frac{V_i - V_{\min}}{V_{\max} - V_{\min}} \times 10$$
 (1)

For negative indicators (smaller numbers reflect a higher level of village development), the following formula is used:

$$I^{th}Village = \frac{V_{\text{max}} - V_{i}}{V_{\text{max}} - V_{\text{min}}} \times 10$$
 (2)

Formulae (4.1) and (4.2) will be applied into basic variables before the IHRDV will be resulted. An important issue related with constructing to the total index (the IHRDV) is how to determine the weight of each field index (3 indicators) in order to construct and get the overall index.

In this study, authors used the simple average method for weighting the each indicator to result the IHRDV. According to Wang (2007), when the number of indicator included is relatively large, this method usually lead to very similar results with the method using the weighting based on the judgment of analysts or experts, and the method using a principle component analysis. This method has also benefit, especially to give consistent measures from year to year, so that changes in the level of development in each village can be correctly traced. For this reason, a simple average method is adopted in this study.

Finally, to get the value of the IHRDV in term of total index, the formula can be written as follows:

$$IHRDV_i = \sum_{j=1}^{3} a.indicators.(ij)$$
 .....(3)

Where:

IHRDV: The Index of Human Resources Development for Villages

i : Village for i (the number of villages depend on the regency)

 $\Sigma$  : Sum of overall indicators

i : Indicator for j (health, education and economic)

a : weight by using the simple average method

To achieve the goals of this study, two instruments of statistical analyses will be applied, namely: (i) the correlation of product moment analysis, and (ii) one way ANOVA (analysis of variance). The correlation of product moment will be used to know the degree of correlation between the value IHRDV and the value of each indicator constructing IHRDV. One way ANOVA is used to analysis the differences of IHRDV in average viewed by the differences of villages typologies / classification.

#### 5. Study Finding

This section of results is further divided in to two subsections statistics regarding IHRDV and the differences of IHRDV viewing by different villages typologies

#### 5.1. IHRDV statistics

The values in term of the descriptive statistical of the quality of human resource development for villages reflected by the IHRDV; which includes: (i) Maximum value, (ii) Minimum value, (iii) The mean value, and (iv) Standard Deviation; can be seen from figure 2.

6 5 3 2 0 Sukoharjo Wonogiri Klaten (N=391) Sragen (N=196) (N=248)(N=150)■ Maximum 4,6726 5,4035 4,8157 5,0531 **■**Minimum 1,7041 2,8547 2,2053 2,5298 ■ Mean 3,3029 3,8795 3,4130 3,7100 ■Standart of Deviation 0,5502 0,4679 0,4644 0,4498

Figure 2: Descriptive Statistics Values of IHRDV Based on Regions in Subosuka\_Wonosraten Areas, Central Java – Indonesia, Year 2011

Source: Authors calculation

From the Figure 2, we can see that the average value of IHRDV in Klaten Regency is the greatest compared with the others (score 3.8795), meanwhile in Wonogiri Regency the average of IHRDV is in the smallest score (score 3.3029). However, If we see the value of Deviation Standard, the smallest score is in Sukoharjo Regency (score 0.4498), and the greatest score is in Wonogiri Regency (score 0.5502). This parameter indicates that in Wonogiri Regency (also has the lowest in average of IHRDV) the level of inequality in villages development is in bad condition compared with other regencies.

Meanwhile, if each indicator is viewed by the contribution into IHRDV, from the Figure 3, we can see that the education indicator provides the greatest role in all areas in Subosuka\_Wonosraten areas. The greatest contribution of this indicator occurred in Klaten Regency (score 5.7019). Except in Sukoharjo Regency, the pattern is almost the same, namely: the education indicator is in first ranks, followed by the health indicator, and then the economic indicator. Explanation of this condition, can be seen in the following figure.

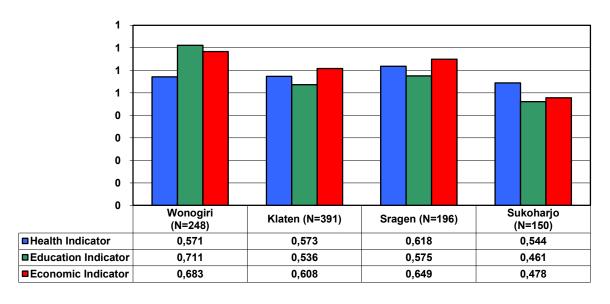
5 4 3 2 1 0 Wonogiri Sragen Sukoharjo Klaten (N=391) (N=248)(N=196)(N=150)■ Health Indicator 3,3712 3,2391 3,5672 3,5529 **■**Education Indicator 3,8501 5,7019 4,0194 4,3454 **■**Economic Indicator 2,6874 2,3695 2,6666 3,5456 ■Human Villages Index 3,3029 3,8795 3,4130 3,7100

Figure 3: Contribution of Each Indicator to IHRDV Based on Regions in Subosuka Wonosraten Areas, Central Java – Indonesia, Year 2011

Source: Authors calculation

On the other hand, when each of indicator constructing / forming IHRDV is correlated with IHRDV, from Figure 4 we can see that the education indicators has the highest correlation with the IHRDV in Wonogiri Regency. For Klaten and Klaten Regencies, Economic Indicators has the highest correlation, as well as to the health indicators in Sukoharo Regency. Explanation in the form of graphics, can be seen in the following figure.

Figure 4: The Level of Correlation Degree of Each Indicator to IHRDV Based on Regions in Subosuka Wonosraten Areas, Central Java – Indonesia, Year 2011



Source: Authors calculation (Notes: All of indicators are significantly at 1%)

Figure 4, indicates that the relationship between IHRDV and its constituent indicators, which tend to be strong in Wonogiri, followed by Sragen, Klaten and Sukoharjo. Education Indicators in Wonogiri even have a relationship with IHRDV degrees until reaching 0711 (or by 71.1%).

#### 5.2. IHRDV viewing by different villages typologies

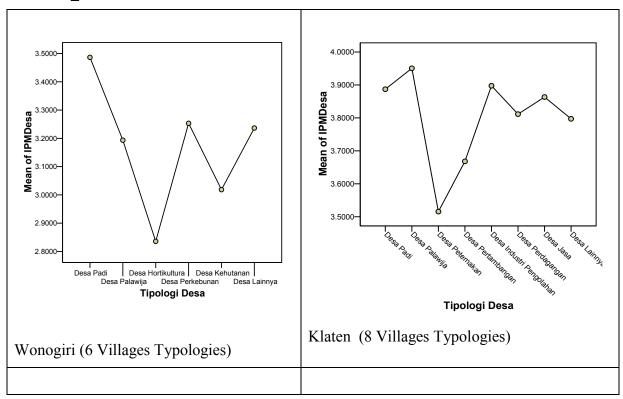
In the previous sections we have discussed about the average value of IHRDV, as an object of study, in the following section we will be assessed the differences of IHRDV viewing by the differences villages typologies. From the four regencies, as an object in this study, only Klaten Regency that it has no significantlt in F statistical test (test of variants of IHRDV mean). It means that differences in existing mean of IHRDV in Klaten Regency, is not caused by the differences of the villages typology, but it is caused by others factors. F test results, can be seen in Table 2.

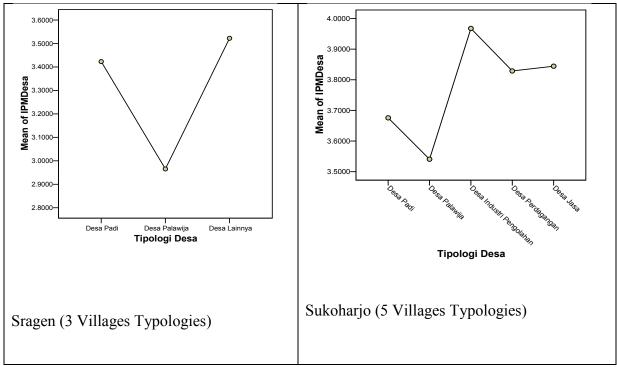
Table2: ANOVA results based on villages Typologies

One Way ANOVA Based of (Significantly at 1%)	on Villages	Typolog	ies in Wonogiri	Regency,	Year 2011
Rosurces of Variation Sum o	f Squares	df	Mean Square	F S	Sig.
Between Groups	9.836	5	1.967	7.332	.000
Within Groups	64.928	242	.268		
Total	74.765	247			
One Way ANOVA Based or Significant)	Villages 7	Гуроlодіе	s in Klaten Reg	ency, Yea	r 2011 (Not
Rosurces of Variation Sum o	f Squares	df	Mean Square	F S	Sig.
Between Groups	1.075	7	.154	.698	.674
Within Groups	84.298	383	.220		
Total	85.373	390			
One Way ANOVA Based on V at 5%)	illages Typo	logies in S	Sragen Regency, Y	Year 2011 (	Significantly
Rosurces of Variation Sum o	f Squares	df	Mean Square	F S	Sig.
Between Groups	1.315	2	.658	3.116	.047
Within Groups	40.740	193	.211		
Total	42.055	195			
One Way ANOVA Based of (Significantly at 10%)	n Villages	Typologi	es in Sukoharjo	Regency,	Year 2011
Rosurces of Variation Sum o	f Squares	df	Mean Square	F S	Sig.
Between Groups	1.714	4	.429	2.185	.074
Within Groups	28.435	145	.196		
Total	30.149	149			

Through Figure 5 it can generally be concluded that: (i) In Winogiri Regency, the villages with the highest IHRDV exist on Rice Farming Village, while the lowest is in the village of horticulture (vegetable and fruit crops villages); (ii) in Klaten regency, the villages with the highest IHRDV exist at the villages of farm crops, while the lowest is in the Animal / husbandry villages; (iii) in Sragen, the villages with the highest IHRDV exist in the Villages Other Sector, while the lowest is in the village of crops, and (iv) in Sukoharjo Regtency, the villages with the highest of IHRDV is in the manufacturing industry villages, while the lowest is in the village of crops. These results indicate that the policy for improving the quality of human resources can not be made the same for all the villages in the district. Results based on the calculation of the villages difference typologies of IHRDV in graphical form, can be seen in the following figure.

Figure 5:Magnitude of IHRDV Based on the Differences of Villages Typologies in Subosuka Wonosraten Areas, Central Java Province in 2011





Source: Authors calculation

#### 6. Summary, Findings and Implication

The IHRDV is very important to measure and evaluate the result of human villages development in Indonesia. This IHRDV is necessary in recent years because the government of Indonesia has increased the expenditures from central to local government (provinces, regencies, and cities). So, the IHRDV can be instruments for knowing the level of human development in the villages context. In particular to know the level of equity and equality of the village human development.

The result of the research provided new ideas in the application and implementation in related with the model for measuring the succeed of the human village development. Several focuses from this study need attention, namely: (i) Modelling for the human village development can be alternative in formulating the policy of village development, specifically in determining of the target of indicators, proviing the key variables, and collecting the data for supporting and creating the good administrative in the village government, (ii) The village contest is very important but the most important is to make the people and the community in order to improve their capabilities to understand about the village development, and then involve to make the progress of village development better and more better, and (iii) The villages are at now in the poor and bad condition, they can be optimized by exploring the potential of the human and natural village resources toward the best village in the next future.

Finally, this study is very important to be developed in the future time, because the laws about villages government in Indonesia now is being criticized by the Indonesian Legislative Assembly. So, IHRDV is very necessary to give some information to some one who interested to the studies about the villages development.

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Appendix 1 Correlation Values between Each of Indicator to the Villages Human Development

Index in Wonogiri Regency, Year 2009

mack in wonogin					1
Indicators Formed	Notes	Indicator of	Indicator of	Indicator of	Vilages Human
IHRDV		Health	Education	Economy	Develop. Index
Indicator of Health	Pearson Correlation	1	.164(**)	.110	.571(**)
	Sig. (2-tailed)		.009	.085	.000
	N	248	248	248	248
Indicator of Education	Pearson Correlation	.164(**)	1	.174(**)	.711(**)
	Sig. (2-tailed)	.009		.006	.000
	N	248	248	248	248
Indicator of Economy	Pearson Correlation	.110	.174(**)	1	.683(**)
	Sig. (2-tailed)	.085	.006		.000
	N	248	248	248	248
Villages Human Development (IHRDV)	Pearson Correlation	.571(**)	.711(**)	.683(**)	1
	Sig. (2-tailed)	.000	.000	.000	
	N	248	248	248	248

Notes: \*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Authors calculation

Appendix 2. Correlation Values between Each of Indicator to the Villages Human Development Index in Klaten Regency, Year 2011

mach in Triaten regency, 1 car 2011						
Indicators Formed IHRDV	Notes	Indicator of Health	Indicator of Education	Indicator of Economy	Vilages Human Develop. Index	
Indicator of Health	Pearson Correlation	1	068	.104(*)	.573(**)	
	Sig. (2-tailed)		.179	.040	.000	
	N	391	391	391	391	
Indicator of Education	Pearson Correlation	068	1	060	.536(**)	
	Sig. (2-tailed)	.179		.236	.000	
	N	391	391	391	391	
Indicator of Economy	Pearson Correlation	.104(*)	060	1	.608(**)	
	Sig. (2-tailed)	.040	.236		.000	
	N	391	391	391	391	
Villages Human Development (IHRDV)	Pearson Correlation	.573(**)	.536(**)	.608(**)	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	391	391	391	391	

Notes:

Source: Authors calculation

<sup>\*</sup> Correlation is significant at the 0.05 level (2-tailed).

<sup>\*\*</sup> Correlation is significant at the 0.01 level (2-tailed).

Appendix 3. Correlation Values between Each of Indicator to the Villages Human Development

Index in Sragen Regfency, Year 2011

maca in Stagen Regioney, Tear 2011						
Indicators Formed	Notes	Indicator of	Indicator of	Indicator of	Vilages Human	
IHRDV		Health	Education	Economy	Develop. Index	
				•		
Indicator of Health	Pearson Correlation	1	018	042	.618(**)	
	Sig. (2-tailed)		.802	.555	.000	
	N	196	196	196	196	
Indicator of Education	Pearson Correlation	018	1	.302(**)	.575(**)	
	Sig. (2-tailed)	.802		.000	.000	
	N	196	196	196	196	
Indicator of Economy	Pearson Correlation	042	.302(**)	1	.649(**)	
	Sig. (2-tailed)	.555	.000		.000	
	N	196	196	196	196	
Villages Human	Pearson Correlation	.618(**)	.575(**)	.649(**)	1	
Development (IHRDV)	Sig. (2-tailed)	.000	.000	.000		
	N	196	196	196	196	

Notes: \*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Authors calculation

Appendix 4. Correlation Values between Each of Indicator to the Villages Human Development Index in Sukoharjo Regency, Year 2011

Indicators Formed IHRDV	Notes	Indicator of Health	Indicator of Education	Indicator of Economy	Vilages Human Develop. Index
Indicator of Health	Pearson Correlation	1	327(**)	.154	.544(**)
	Sig. (2-tailed)		.000	.060	.000
	N	150	150	150	150
Indicator of Education	Pearson Correlation	327(**)	1	180(*)	.461(**)
	Sig. (2-tailed)	.000		.028	.000
	N	150	150	150	150
Indicator of Economy	Pearson Correlation	.154	180(*)	1	.478(**)
	Sig. (2-tailed)	.060	.028		.000
	N	150	150	150	150
Villages Human Development (IHRDV)	Pearson Correlation	.544(**)	.461(**)	.478(**)	1
	Sig. (2-tailed)	.000	.000	.000	
	N	150	150	150	150

Notes: \* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Authors calculation

# Approaches to measure quality of human resource development index in the village context: case of Central Java, Indonesia

by Mulyanto And Habibullah Magsi

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12

Approaches to measure quality of human resource development index in the village context: case of Central Java, Indonesia <sup>1</sup>

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#### Abstract

This study was attempted to develop the model for measuring human development progress at village level by using an index system, namely Index of Human Resources Development for Villages (IHRDV). For this study four Regencies in Central Java Province were chosen as a pilot project, i.e. Wonogiri, Klaten, Sragen and Sukoharjo. IHRDV is composed over health, education and economic indicators. Each indicator consists of some variables derived from secondary data, where simple average method is applied to construct the model. Meanwhile, correlation of product moment and analyses of variance were used to analyze the differences of IHRDV. As results education indicator gives biggest contribution, while economic indicator provides smallest contribution to the IHRDV, while in Suhoharjo, health indicator gives smallest contribution to the IHRDV. There are some differences result if the IHRDV is correlated. The economic indicator has biggest correlation with the IHRDV in Klaten and Sragen, where education indicator has biggest correlation with the IHRDV in Wonogiri, and health indicator in Sukoharjo. With the 10 percent level of significance, only Klaten found having no significance while testing one-way analysis of variance in related with the differences of villages typologies. It implies that there are not differences among the IHRDV viewed by the differences of villages typologies. Through this study we would like to provide the value of IHRDV in average for the villages with rice cultivated area have the highest score compared with the others in Wonogiri, while villages with crops planted area have the highest score compared with the others in Klaten. While, the villages with manufacturing industry have highest score in Sukoharjo. Thus it is concluded that the effort to constructing the model for measuring progress of human development in the villages context has a big role in Indonesia for achieving a good condition in the future time. It is important to understand because in the villages, the public services are begun and never ending up to now.

Keywords: Development; Index; IHRDV; Central Java; Indonesia

JEL Classification: R12, R58

20

<sup>&</sup>lt;sup>1</sup> First version of this article has been presented in 23rd Pacific Conference of the Regional Science Association International (RSAI) and the 4th Indonesian Regional Science (IRSA) Institute, Bandung – Indonesia during 2-4 July 2013. Authors can be contacted: yanto.mul@gmail.com & magsihabib@gmail.com

#### 1. Introduction

It is commonly believed that Gross Domestic Product (G5P) per capita is not a perfect measure of development progress in many countries in the world, irrespective of whether it is adjusted for purchasing power differences among countries or not (see Ogwang, 1997; Wang, 2007; Zgurovsky, 2007). As a consequence, researchers have devoted much effort to develop composite indices of developation progress. For examples, Morris (1979) had developed the composite indices called by the Physical Quality of Life Index (PQLI). That effort was continued by Mahbub ul Haq (UNDP, 2006) by using the composed indices called by the Human Development Index (HDI) in 1990s.

As an illustratiton, the results of macro-level indicators of development in Indonesia, especially when compared with other countries shows that of the 14 kinds of development indicators, the most prominent ranking in Indonesia is an indicator of the population, ranks 4th out of 237 countries with a number of population in the year 2010 about 237.6 million (Statistics Indonesia, 2012). On the other hand, a large number of population are reproportional to the level of prosperity of the population and the quality of human resources. Gross Domestic Product (GDP) per capita as reflection of the level of prosperity of nation, can be classified into the low category, amounting to US \$4,300, and ranks 154 out of 237 countries. Condition of the human quality of development indicated by the Human Development Index (HDI) is also classified into low category, and ranks 108 out of 169 countries. Description of the data and indicators can be seen in Table 1.

On the other hand, national development policy in related with the field of regional development among others, is aimed to reduce the gap of development among the villages in Indonesia. As we know the numbers of villages in Indonesia in 2009 are about 77.012 villages which are distributed into 6.652 subdistricts, 98 cities, and 399 regencies (Badan Pusat Statistik (BPS) / Statistic Indonesia, 2012). With a growing number of villages, it should be followed by the increasing of quality in managing the development in the villages. It is important to understand because in the villages, the public services are begun and never ending up to now.

Table 1: Ranks and Position of Several Indicators of Development in Indonesia Compared with the Others Countries in the World

No.	Indicators of Development in Indonesia	Rank of Indonesia	No. of Countries Observed
01.	Global Competitive Index (Year 2010-2011)	44	139
02.	Infrastructure (Year 2010-2011)	82	139
03.	Health and Primary Education (Year 2010-2011)	62	139
04.	Infant Mortality Rate (Year 2010-2011)	97	139
05.	Life Expectancy Rate (Year 2010-2011)	91	139
06.	Quality of Basic Education(Year 2010-2011)	55	139
07.	Human Development Index (Year 2010)	108	169
08.	Corruption Perception Index/ CPI (Year 2010)	110	178
09.	State Failure Risk(Year 2010)	61	178
10.	Education Development Index (Year 2010)	65	128
11.	Population 237,6 milliun (Year 2010)	4	237
12.	GDP US\$ 1.033 billiun (Year 2010)	16	237
13.	GDP Per Capita US\$ 4,300 (Year 2010)	154	237
14.	unemployment 7,1% (Year 2010)	75	237

Source: Adobted from Roberto Akyuwen, 2011.

40

In related with the above condition, the objectives of this study were: (i) to construct the Index of Human Resources Development for Villages (IHRDV) as an instrument for measuring the progress of human resources development for the villages, (ii) to test the degree of correlation between the IHRDV and its indicators constructing the IHRDV, and finally (iii) to know the difference of IHRDV in average if the villages are distinguished by type of the villages typologies. This paper is classified into six sections. Section II explains about the previous studies, where section III devoted to IHRDV model explanation and selection strategies of indicators. In Section IV we describe about methodological consideration and data collection procedure. Section V comprised over result of the study, and finally we provide conclusion and policy prospects.

#### 2. Literature reviewed

In 1970s, Morris (1979) used two main indicators, namely health indicator and education indicator to measuring the agrievement of human resources development. Both of these indicators were measured by infant mortality rates, life expectancy at age one, and literacy

percentage rates. Meanwhile, Mahbub ul Haq in 1990s (UNDP, 2006) had also developed the Morris's model by adding other indicator, namely the income indicator indicated by the GDP corrected by Purchasing Power Parity (PPP). In recent years, there are also a lot of composite indices for measuring the progress of development in the specific area. For examples: Indicators of Good Governance (IGG) developed by Philippine Institute for Development Studies (1999); Regional Attractiveness Index (RAI) constructed by the Price-Water-houseCooper (2001); Urban Governance Imperior (UGI) arranged by UN-HABITAT (2002) for the Global Campaign on Urban Governance; Environmental Sustainability Index (ESI) developed by Yale University (2005); Indicators of Sustainability Development (ISD) constructed by United Nations (2007); and also the Vulnerability and Resilience Index (VRI) developed by Malta University (2008).

For measuring and evaluating the progress of development in provinces level in People's Republic of China (PRC), Wang (2007) had developed the index system called by a Regional Development Index (RDI). In this study, Wang used ten field indices (and one reference index) to measure the regional development in different fields. They were: (i) Level of economic development; (ii) Productivity and Research & Development; (iii) Human development; (iv) Education; (v) Social equity; (vi) Public services; (vii) Social security; (viii) Infrastructure; (ix) Environment protection; (x) Institutional development; and (xi) Natural resources and geographic location (reference index). Wang (2007) would like to get proof that regional disparities in the PRC were the result of a combination of geographic location, economic policy, and others factors such as infrastructural conditions as be found by economists in the previous studies.

On the other hand, BAPPENAS (Indonesian Planning Agency) in 1991 had also constructed a Regional Development Index (RDI). This RDI was developed to measuring the regional development in 26 provinces in Indonesia by using secondary data in years 1994, 1996 and 1998. This study was done before the program of regional autonomy has been implemented in Indonesia since 2001. BAPPENAS used three indicators to construct he RDI, namely: (i) Indicator of government's capacity and capability; (ii) Indicator of regional development; and (iii) Indicator of public empowerment. Each of indicators was derived into three Sub Indicators. By using the RDI, progress and evaluation on regional development can be measured and evaluated together, so the RDI can provides to us some useful information about the progress of regional development at the provincial level or the others level. This study wants to develop the RDI model that had been developed by Wang (2007) and Bappenas (2001) for the contect of village government by doing adjustment to some indicators and variables used in this study.

Khalifa and Connelly (2009) had also constructed Local Indicators of Sustainable Development and Local Human Development Index in the case of rural in Egypt. They used five indicators and 12 sub-indicators to get guideline for evaluating the criteria for the success of rural development. Similarily, Emilija and Meyers (2010) also had implemented the the assessment for measuring the regional indicators for the development of the villages in Lithuania. They used four aspects, then derived into nine indicators. besides that there are also suggestions regarding inconcistnece for Human Development Index (Herrero et al. 2012).

There are still some inconsistencies in the new construction that have to be ad 32 ssed (in particular, the use of a composite variable to approach educational achievements, the use of logs for the income variable and the type of normalization adopted). We discuss in this paper those inconsistencies and suggest some relatively minor changes that would suffice to avoid them.

In general, we have been inspired through the available literature by doing the adaptation and adjustment in accordance with the availability of data in the villages where the study was conducted.

#### 3. IHRDV and Indicator Selection Strategy

The IHRDV is constructed by using a simple average method from three indicators, namely: (i) Health Indicators, (ii) Education Indicators, and (iii) Economic Indicators. Each of three indicators directly presents a certain field of development in the village government, and they together constitute the overall index (IHRDV). Each indicator consists of several variables, which are based on one or more basic secondary data available in the document of sub district in the figures published by BPS (Statistics Indonesia) in Year 2011. Technical explanation of the indicators and several variables used in this study can be described as follow:

#### 3.1. Health Indicators

- Ratio of the number of health facilities to the number of population times by 1,000
- Ratio of the number of medical staff to the number of population times by 1,000
- Percentage of the number of toilet ownership by family to the number of households
- Infant bird rate per 1.000
- Infant mortality rate per 1,000

#### 3.2. Education Indicators

- Ratio of the number of primary school building to the number of pupils times by 100
- Ratio of the number of pupils to the number of teachers in primary school level
- Ratio of the number of pupils in primary school to the number of school age population 7-12 years times by 100
- Percentage of population with educational attainment in senior high school and over to number of population age 5 year over

#### 3.3. Economic Indicators

Ratio of the number of trading and finance facilities to the number of population times by
 1,000

- Ratio of the number of micro, small and medium enterprises to the number of population times by 1,000
- Percentage of the number of employment in agriculture sector to the total number of employment
- Percentage of the number of employment in industry sector to the total number of employment
- The number of cars and motorcycles to the number of households times by 100
- Ratio of length of roads asphalted to the total number of length of roads times by 100
- Ratio the total number of length of roads to the land area of village
- Ratio the number of telecomunication facilities to the number of house-holds times by 100

#### 4. Data and Methodology

For constructing the IHRDV as an instrument for measuring the progress of villages development in Indonesia, about 985 villages were selected from four regencies. The specific areas used in this study is detailed as follows: (i) Wonogiri Regency (248 Villages, 25 Subdistricts), (ii) Klaten Regency (391 Villages, 26 Subdistricts), (iii) Sragen Regency (196 Villages, 20 Subdistricts), and (iv) Sukoharjo Regency (150 Villages, 12 Subdistricts) (see Figure 1). The method for choosing these areas using the concept of Klassen Typology. The data used in this study was scondary data publised by BPS (Statistics Indonesia) in the year of 2011.

According to BPS (2008) in the survey of villages potential data, villages in Soloraya areas could be classified into 10 (ten) villages classification, namely: (i) Paddy/rice planted area villages; (ii) Crops planted area villages; (iii) Horticulture villages; (iv) Plantation villages; (v) Animal / husbandry villages; (vi) Forestry villages; (vii) Mining and quarrying villages; (viii) Manufacturing industry villages; (ix) Trade, retail and restaurant villages; and finally (x) Services villages.

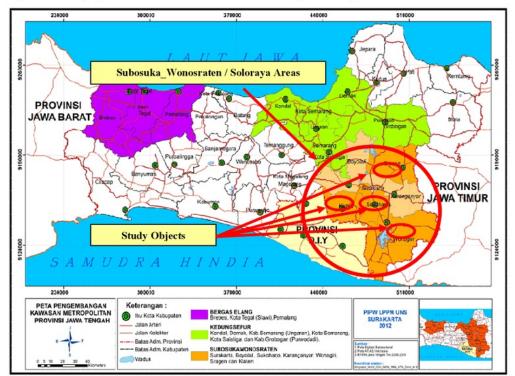


Figure 1: Map of Subosuka Wonosraten or Soloraya Areas, Central Java Province - Indonesia

In this study, the index system for constructing the IHRDV have been developed similar (some extent) to Wang (2007) Regional Development Index (RDI) in China. In order to derive the aggregation of field indices and the overall index, data need to be normalized, so all basic indicators are transformed into a 0-10 score. The scores between 0 and 10 indicates the positions of the relevant villages at lowest and highest levels of village development. For positive indicators (greater numbers reflect higher level of development), the scores are calculated using the following formula (Agarwal and Samanta, 2006; and Wang, 2007):

$$I^{\prime h} Village = \frac{V_i - V_{\min}}{V_{\max} - V_{\min}} \times 10 \tag{1}$$

For negative indicators (smaller numbers reflect a higher level of village development), the following formula is used:

$$I^{th}Village = \frac{V_{\text{max}} - V_{i}}{V_{\text{max}} - V_{\text{min}}} \times 10$$
 (2)

Formulae (4.1) and (4.2) will be applied into basic variables before the IHRDV will be resulted. An important issue related with constructing to the total index (the IHRDV) is how to determine the weight of each field index (3 indicators) in order to construct and get the overall index.

In this study, authors used the simple aver the method for weighting the each indicator to result the IHRDV. According to Wang (2007), when the number of indicator included is relatively large, this method usually lead to very similar results with the method using the weighting based on the judgment of analysts or experts, and the method using a principle component analysis. This method has also benefit, especially to give consistent measures from year to year, so that changes in the level of development in each village can be correctly traced. For this reason, a simple average method is adopted in this study.

Finally, to get the value of the IHRDV in term of total index, the formula can be written as follows:

$$IHRDV_i = \sum_{j=1}^{3} a.indicators.(ij)$$
 .....(3)

Where:

IHRDV: The Index of Human Resources Development for Villages

i : Village for i (the number of villages depend on the regency)

 $\Sigma$ : Sum of overall indicators

j : Indicator for j (health, education and economic)

a : weight by using the simple average method

To achieve the goals of this study, two instruments of statistical analyses will be applied, namely: (i) the correlation of product moment analysis, and (ii) one way ANOVA (analysis of variance). The correlation of product moment will be used to know the degree of correlation between the value IHRDV and the value of each indicator constructing IHRDV. One way ANOVA is used to analysis the differences of IHRDV in average viewed by the differences of villages typologies / classification.

#### 5. Study Finding

This section of results is further divided in to two subsections statistics regarding IHRDV and the differences of IHRDV viewing by different villages typologies

#### 5.1. IHRDV statistics

The values in term of the descriptive statistical of the quality of human resource development for villages reflected by the IHRDV; which includes: (i) Maximum value, (ii) Minimum value, (iii) The mean value, and (iv) Standard Deviation; can be seen from figure 2.

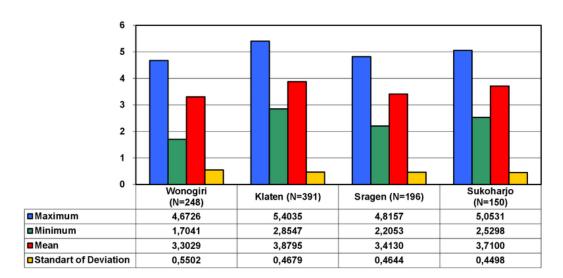


Figure 2: Descriptive Statistics Values of IHRDV Based on Regions in Subosuka\_Wonosraten Areas, Central Java – Indonesia, Year 2011

Source: Authors calculation

From the Figure 2, we can see that the average value of IHRDV in Klaten Regency is the greatest compared with the others (score 3.8795), meanwhile in Wonogiri Regency the average of IHRDV is in the smallest score (score 3.3029). However, If we see the value of Deviation Standard, the smallest score is in Sukoharjo Regency (score 0.4498), and the greatest score is in Wonogiri Regency (score 0.5502). This parameter indicates that in Wonogiri Regency (also has the lowest in average of IHRDV) the level of inequality in villages development is in bad condition compared with other regencies.

Meanwhile, if each indicator is viewed by the contribution into IHRDV, from the Figure 3, we can see that the education indicator provides the greatest role in all areas in Subosuka\_Wonosraten areas. The greatest contribution of this indicator occurred in Klaten Regency (score 5.7019). Except in Sukoharjo Regency, the pattern is almost the same, namely: the education indicator is in first ranks, followed by the health indicator, and then the economic indicator. Explanation of this condition, can be seen in the following figure.

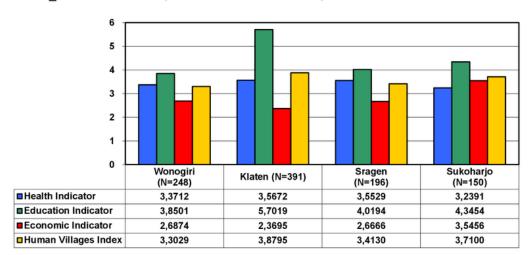
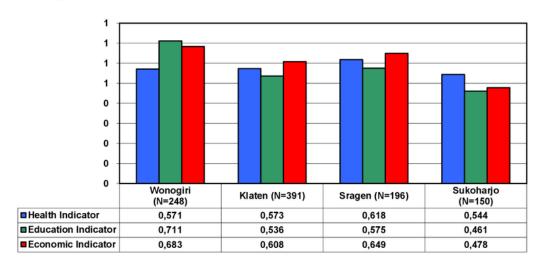


Figure 3: Contribution of Each Indicator to IHRDV Based on Regions in Subosuka Wonosraten Areas, Central Java – Indonesia, Year 2011

2 Source: Authors calculation

On the other hand, when each of indicator constructing / forming IHRDV is correlated with IHRDV, from Figure 4 we can see that the education indicators has the highest correlation with the IHRDV in Wonogiri Regency. For Klaten and Klaten Regencies, Economic Indicators has the highest correlation, as well as to the health indicators in Sukoharo Regency. Explanation in the form of graphics, can be seen in the following figure.

Figure 4: The Level of Correlation Degree of Each Indicator to IHRDV Based on Regions in Subosuka\_Wonosraten Areas, Central Java – Indonesia, Year 2011



Source: Authors calculation (Notes: All of indicators are significantly at 1%)

Figure 4, indicates that the relationship between IHRDV and its constituent indicators, which tend to be strong in Wonogiri, followed by Sragen, Klaten and Sukoharjo. Education Indicators in Wonogiri even have a relationship with IHRDV degrees until reaching 0711 (or by 71.1%).

#### 5.2. IHRDV viewing by different villages typologies

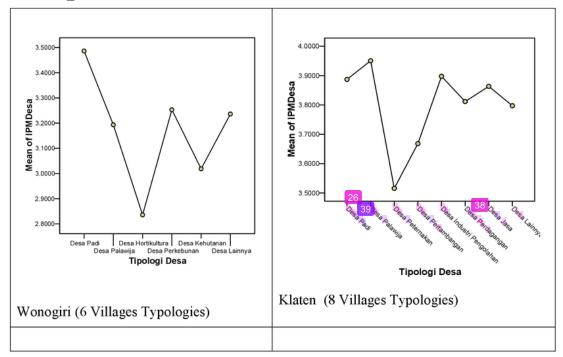
In the previous sections we have discussed about the average value of IHRDV, as an object of study, in the following section we will be assessed the differences of IHRDV viewing by the differences villages typologies. From the four regencies, as an object in this study, only Klaten Regency that it has no significantly in F statistical test (test of variants of IHRDV mean). It means that differences in existing mean of IHRDV in Klaten Regency, is not caused by the differences of the villages typology, but it is caused by others factors. F test results, can be seen in Table 2.

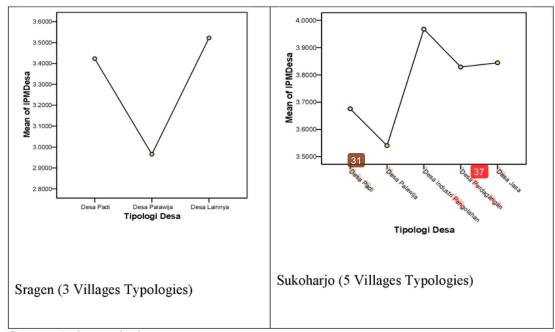
Table2: ANOVA results based on villages Typologies

One Way ANOVA I	Based on Village	es Typolog	ies in Wonog	giri Regenc	y, Year	2011
(Significantly at 1%)						
	4				e. I	
Rosurces of Variation	Sum of Squares	df	Mean Square	$\mathbf{F}$	Sig.	
Between Groups	9.836	5	1.967	7.332	.000	
Within Groups	64.928	242	.268			
Total	74.765	247				
One Way ANOVA B			e in Klaten R	Pegency V	ear 2011	Not
Significant)	asea on vinages	, Typologic	5 III Klateli I	tegeney, 1	cai 2011	(1101
Significant)	4					
Rosurces of Variation	Sum of Squares	df	Mean Square	$\mathbf{F}$	Sig.	
Between Groups	1.075	7	.154	.698	.674	
Within Groups	84.298	383	.220			
Total	85.373	390				
One Way ANOVA Base		nalaging in	Sragan Daganar	. Voor 201	1 (Cianifi	a a m t l v z
	ed on vinages ry	porogres in	Stagen Regency	y, 1ear 201	i (Sigiiii	cantry
at 5%)	4					
Rosurces of Variation	Sum of Squares	df	Mean Square	$\mathbf{F}$	Sig.	
Between Groups	1.315	2	.658	3.116	.047	
Within Groups	40.740	193	.211			
Total	42.055					
One Way ANOVA I			ios in Sukoho	rio Pagana	v Voor	2011
	sased on village	es Typolog	ies in Sukona	ijo Kegeno	y, rear	2011
(Significantly at 10%)						
Rosurces of Variation	Sum of Squares	df	Mean Square	$\mathbf{F}$	Sig.	
Between Groups	1.714	4	.429	2.185	.074	
Within Groups	28.435	145	.196			
Total	30.149	149				

Through Figure 5 it can generally be concluded that: (i) In Winogiri Regency, the villages with the highest IHRDV exist on Rice Farming Village, while the lowest is in the village of horticulture (vegetable and fruit crops villages); (ii) in Klaten regency, the villages with the highest IHRDV exist at the villages of farm crops, while the lowest is in the Animal / husbandry villages; (iii) in Sragen, the villages with the highest IHRDV exist in the Villages Other Sector, while the lowest is in the village of crops, and (iv) in Sukoharjo Regtency, the villages with the highest of IHRDV is in the manufacturing industry villages, while the lowest is in the village of crops. These results indicate that the policy for improving the quality of human resources can not be made the same for all the villages in the district. Results based on the calculation of the villages difference typologies of IHRDV in graphical form, can be seen in the following figure.

Figure 5:Magnitude of IHRDV Based on the Differences of Villages Typologies in Subosuka\_Wonosraten Areas, Central Java Province in 2011





Source: Authors calculation

#### 6. Summary, Findings and Implication

The IHRDV is very important to measure and evaluate the result of human villages development in Indonesia. This IHRDV is necessary in recent years because the government of Indonesia has increased the expenditures from central to local government (provinces, regencies, and cities). So, the IHRDV can be instruments for knowing the level of human development in the villages context. In particular to know the level of equity and equality of the village human development.

The result of the research provided new ideas in the application and implementation in related with the model for measuring the succeed of the human village development. Several focuses from this study need attention, namely: (i) Modelling for the human village development can be alternative in formulating the policy of village development, specifically in determining of the target of indicators, proviing the key variables, and collecting the data for supporting and creating the good administrative in the village government, (ii) The village contest is very important but the most important is to make the people and the community in order to improve their capabilities to understand about the village development, and then involve to make the progress of village development better and more better, and (iii) The villages are at now in the poor and bad condition, they can be optimized by exploring the potential of the human and natural village resources toward the best village in the next future.

Finally, this study is very important to be developed in the future time, because the laws about villages government in Indonesia now is being criticized by the Indonesian Legislative Assembly. So, IHRDV is very necessary to give some information to some one who interested to the studies about the villages development.

### Acknowledgment

17

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Appendix 1 Correlation Values between Each of Indicator to the Villages Human Development Index in Wonogiri Regency, Year, 2009

index in wonogiri	Regency, Year 2009				
Indicators Formed IHRDV	Notes	Indicator of Health	Indicator of Education	Indicator of Economy	Vilages Human Develop. Index
Indicator of Health	Pearson Correlation	1	.164(**)	.110	.571(1*)
	Sig. (2-tailed)		.009	.085	.000
	N	248	248	248	248
Indicator of Education	Pearson Correlation	.164(**)	1	.174(**)	.711(**)
	6g. (2-tailed)	.009		.006	.000
	N	248	248	248	248
Indicator of Economy	Pearson Correlation	.110	.174(**)	1	.683(**)
	6g. (2-tailed)	.085	.006		.000
	N	248	248	248	248
Villages Human	Pearson Correlation	.571(**)	.711(**)	.683(**)	1
Development	6g. (2-tailed)	.000	.000	.000	
(IHRDV)	N	248	248	248	248

Notes: \*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Authors calculation

Appendix 2. Correlation Values between Each of Indicator to the Villages Human Development Index in Klaten Regency, Year 2011

mach mi renaton rec	JJ,				
Indicators Formed IHRDV	Notes	Indicator of Health	Indicator of Education	Indicator of Economy	Vilages Human Develop. Index
Indicator of Health	Pearson Correlation	1	068	.104(*)	.573(**)
	Sig. (2-tailed)		.179	.040	.000
	N	391	391	391	391
Indicator of Education	Pearson Correlation	068	1	060	.536(**)
	Sig. (2-tailed)	.179		.236	.000
	N	391	391	391	391
Indicator of Economy	Pearson Correlation	.104(*)	060	1	.608(**)
	Sig. (2-tailed)	.040	.236		.000
	N	391	391	391	391
Villages Human	26 arson Correlation	.573(**)	.536(**)	.608(**)	1
Development	Sig. (2-tailed)	.000	.000	.000	
(IHRDV)	N	391	391	391	391

Notes: \* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Authors calculation

Appendix 3. Correlation Values between Each of Indicator to the Villages Human Development

Index in Sragen Regfency, Year 2011

muck in Stagen Re	grency, rear 2011				
Indicators Formed IHRDV	Notes	Indicator of Health	Indicator of Education	Indicator of Economy	Vilages Human Develop. Index
Indicator of Health	gearson Correlation	1	018	042	.618(**)
	Sig. (2-tailed)		.802	.555	.000
	N	196	196	196	196
Indicator of Education	Pearson Correlation	018	1	.302(**)	.575(**)
	Sig. (2-tailed)	.802		.000	.000
	N	196	196	196	196
Indicator of Economy	Pearson Correlation	042	.302(**)	1	.649(**)
	Sig. (2-tailed)	.555	.000		.000
	N	196	196	196	196
Villages Human	Pearson Correlation	.618(**)	.575(**)	.649(**)	1
Development	Sig. (2-tailed)	.000	.000	.000	
(IHRDV)	N	196	196	196	196

Notes: \*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Authors calculation

Appendix 4. Correlation Values between Each of Indicator to the Villages Human Development Index in Sukohario Regency, Year 2011

muck in Sukonarjo	Regency, Tear 2011				
Indicators Formed IHRDV	Notes	Indicator of Health	Indicator of Education	Indicator of Economy	Vilages Human Develop, Index
INKOV		riodiai	Ludoduon	Loonomy	Bevelop. IIIdex
Indicator of Health	8 arson Correlation	1	327(**)	.154	.544(**)
	Sig. (2-tailed)		.000	.060	.000
	N	150	150	150	150
Indicator of Education	8 arson Correlation	327(**)	1	180(*)	.461(**)
	Sig. (2-tailed)	.000		.028	.000
	N	150	150	150	150
Indicator of Economy	8 arson Correlation	.154	180(*)	1	.478(**)
	Sig. (2-tailed)	.060	.028		.000
	N	150	150	150	150
Villages Human	Rearson Correlation	.544(**)	.461(**)	.478(**)	1
Development	Sig. (2-tailed)	.000	.000	.000	
(IHRDV)	N	150	150	150	150

Notes: \* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Authors calculation

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