38th FEDERATION OF ASEAN ECONOMIC ASSOCIATIONS ANNUAL CONFERENCE

28-29 November 2013

Singapore

Conference Programme

THE FEDERATION OF ASEAN ECONOMIC ASSOCIATIONS

38th Annual Conference of FAEA
The ASEAN Community: Integrating Sustainable Urban and Rural Development
School of Humanities and Social Sciences, Nanyang Technological University

28th -29th November 2013

Conference Programme

Day One-28 November 2013 (Thursday)

8.00	**Registration**
9.00	**Opening Remarks** *Professor Euston Quah* *President, Economic Society of Singapore*
9.20	**Keynote Presentations**
	Chaired by Professor Lim Chong Yah (Emeritus Professor of Economics, Nanyang Technological University and National University of Singapore *H.E. Ong Keng Yong* *High Commissioner of Singapore to Malaysia* *Mr. Rae Kwon Chung* *Director of UNESCAP* *Former Ambassador for Climate Change of the Republic of Korea*
10.20	**Tea Reception**
10.50	**Parallel Sessions**
	Session 1: Information and Measurement Chaired by: Dr. Alvin Ang, President, Philippine Economics Society ***"A Multifractality Measure of Stock Market Efficiency in ASEAN Region"*** *Harvey M. Niere, Mindanao State University, Philippines* ***"Information Processing Theory in Budgetary Participation: Its Antecedent and Consequence"*** *Dian Indri Purnamasari Pembangunan Nasional University "Veteran" – Yogyakarta, Indonesia* ***"Emotional Quotient and Preparedness of Accounting Students for IFRS"*** *Rida Perwita Sari, Universitas Pembangunan Nasional "Veteran" East Java, Indonesia*

"Sustainability Reporting of University in Indonesia"
Erna Sulistyowati, Endah Susilowati, Rida Perwita, Universitas Pembangunan Nasional "Veteran" East Java, Indonesia

Session 2: Financial Market and Economic Incentives (Part One)
Chaired by: Dr. Chayodom Sabhasri, Dean, Faculty of Economics, Chulalongkorn University

"CO2 Emission and Carbon Tax in Singapore"
Toh Mun Heng, National University of Singapore

"The Effects of AFTA on Macroeconomic Variables and Poverty: Evidence of Laos"
Phouphet Kayophilavong, National University of Laos

"Martingales in Floating ASEAN+3 Currencies"
Cesar C. Rufino, De La Salle University-Manila Philippines

"Divergent Bubbles in a Small Open Economy"
Athakrit Thepmongkol, National Institute of Development Administration, Thailand

12.20	**Lunch**
13.20	**Creating the ASEAN Community: A Sustainable Earth Office Plenary Session** Chaired by: Professor Alexander Zehnder, Chair, Sustainable Earth Office, Nanyang Technological University *Mely Caballero- Anthony (Associate Professor, Former Director of External Relations, The ASEAN Secretariat, Head, RSIS Centre for NTS Studies Secretary-General, Consortium of Non-Traditional Security Studies in Asia (NTS-Asia)* *Joergen Oerstroem Moeller (Visiting Senior Research Fellow, Institute of Southeast Asian Studies (ISEAS), Singapore, Senior Fellow, MFA Diplomatic Academy, Singapore, Adjunct Professor at Singapore Management University (SMU), Adjunct Professor at Copenhagen Business School (CBS)* *Khoo Teng Chye, Executive Director, Centre for Liveable Cities*
15.20	**Coffee Break**
16.00	**Session 3: Financial Market and Economic Incentives (Part Two)** Chaired by: Dr. Walter Theseira, Honorary Secretary, Economic Society of Singapore ***"Exploring Compliance Tax Perceptions in a Indonesia Small Medium Enterprise Community"*** *Indrawati Yuhertiana, Rina Mustika, Sri Hastuti, Siti Sundari ,University of Pembangunan, Indonesia* ***"Regional Interest Rate variations: evidence from the Indonesian credit markets"*** *Masagus Ridhwan , HLF de Groot, P. Rietveld, and P. Nijkamp, Economist, Bank Indonesia* ***"Measuring asymmetric volatility and stock returns in the Philippine Market"*** *Daniel S. Hofilena, Maria Francesca D. Tamaliwan, De La Salle University-Manila, Philippines* ***"Paper Raw Material Inventory Analysis Method Using Economic Order Quantity (EOQ) In Tribun Makassar"*** *Mahlia Muis, Hasanuddin University Makassar, Dyah Sawitri, Gajayana University Malang*

Session 4: Innovation and Entrepreneurship

Chaired by: Mr. Tran Duch Minh, Deputy Secretary General, Vietnam Economic Association

"The Model of Index for Measuring the Progress of Rural Development at Autonomy Era in Indonesia: A Pilot Project in Klaten Regency, Central Java"
Mulyanto , Sebalas Maret University (UNS) Sukarta, Indonesia

"Rural Economic Structure Change to a Balanced Economy Based Maze Agribisnis in Grobogan"
Endang Siti Rahayu, Rahmawati, Muhammad Harisudin University of Sebalas Maret Surakarta, Indonesia

"The Entrepreneurship Incubator Model Based on Empowermetn to Improve Independence of Graduates of the Faculty of Economics Sebelas Maret University Indonesia"
Rahmawati and Soenarto, University of Sebalas Maret Surakarta, Indonesia

"Productivity Improvement Strategy of Handycraft Creative Industry, Community, Based Resource Management Effort"
Ignatia Sri Seventi, Anastasia Riani Sebalas Maret University Indonesia

17.30	**Conference Dinner**

Day Two-29 November 2013 (Friday)

8.00	**Registration**
9.00	**Opening Remarks** *Professor Euston Quah* *President, Economic Society of Singapore*
9.20	**Economic Growth Centre Plenary Session: ASEAN Finance, Banking and International Development** Chaired by: Associate Professor Low Chan Kee, Associate Chair (Administration), School of Humanities and Social Sciences, Nanyang Technological University *Yeo Lay Hwee, Director of European Union Centre* *Roman Zytek, Middle East and Central Asia Department, International Monetary Fund; and Research and International Division, Ministry of Finance, Brunei Darussalam (until July 31, 2013)* *Abdul Mongid, Pernabas Surabaya, Indonesia*
10.35	**Coffee Break**
10.35	**FAEA Presidential Meeting (Official Delegates of FAEA Member Societies/Associations)**
11.00	**Parallel Sessions**

Session 5: Building ASEAN Economic Community

Chaired by: Dr. Wisarn Pupphavesa, Senior Advisor, International Economic Relations Program, Thailand Development Research Institute

"Financial Inclusion: The Financial Need for the Poor in Cambodia"
Pum Sophy, Angkor Mikroheranhwatho Kampuchea (AMK) Co. Ltd, Phnom Penh Cambodia

"Enhancing ASEAN Connectivity: Venturing into Islamic Finance as a New Source of Infrastructure Financing"
Saadiah Mohamad, Universiti Teknologi MARA Malaysia

"Trade integration in ASEAN and Vietnam's economic development"
Nguyen Anh Thu, Vietnam National University, University of Economics and Business, Vietnam

"The Impact of the ASEAN Economic Community and Regional Labor Movement"
Danupon Ariyasajjakorn, Thailand

Session 6: **Urban and Rural Sustainable Developments**
Chaired by: Professor Chew Soon Beng, Honorary Treasurer, Economic Society of Singapore

"Sustainable livelihoods in an urban setting: a framework of study for Klang Valley taxi drivers"
Nurul Huda Mohd Satar, University of Malaya, Kuala Lumpur, Malaysia

"Sustainability Forgone: Environmental and economic analysis of Tuna Fishery in Indonesia"
Budy Wiryawan and Nimmi Zubainarni, Bogor Agricultural University, Indonesia)

Session 7: **Environmental Policy and Governance**
Chaired by: Mr William Clune, Honorary Assistant Secretary, Economic Society of Singapore

"Corporate Social Responsibility Programs of A Mining Company in Southern Philippines"
John Vincent C. Espenido, Mindanao State University-Iligan Institute of Technology (MSU-IIT), Philippines)

"Public Choice and the Generalized Resource Curse"
Majah-Leah V. Ravago , University of the Philippines

"Land Management Quality and Public Governance Democratization (Impact analysis of democratization of public governance and efficiency of public administration on land management quality at the local level)"
Vu Hoang Duong, M.A (Economics) Vietnam Institute of Economics Vietnam Academy of Social Sciences

"The Influence of Islamic Leadership Style on Work Commitment and Employee Work Satisfaction in BNI Syariah Surabaya"
Dina Fitrisia Septiarini and Toriqul Hajjil Akbar, Airlangga University, Surabaya, Indonesia

12.30	**Lunch**
13.30	**Closing Remarks/Handling Over of Chairmanship to the Next Host**
14.00	**End of Conference** **City Tour**

**Conference Program is tentative and subjected to changes with decision by the Organizing Committee*

THE MODEL OF INDEX FOR MEASURING THE PROGRESS OF RURAL DEVELOPMENT AT AUTONOMY ERA IN INDONESIA: A PILOT PROJECT IN KLATEN REGENCY, CENTRAL JAVA[1)]

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ABSTRACT

The purposes of this study were: (i) to construct the Villages Development Index (VDI) as a model for measuring the progress of rural development at autonomy era in Indonesia, and (ii) to analyze the differences of VDI by viewing the differences of villages development based on the differences of the typology of village and the differences of VDI if it was analized by using the differences of variables of net migration and variables of sex ratio.

The model of VDI was constructed by using 9 (nine) indicators. Each indicator consists of some variables developed from the secondary data published by Statistics Indonesia of the document of Sub-District in the Vigures in year 2012. The simple average method was used to set up the model of VDI. Meanwhile the method of correlation of product moment and analyses of variace were used to analize the differences of VDI based on each indicator which constructing the VDI and difference of each typology of the villages.

By using 391 villages of 26 Sub-District in Klaten Regency, it has been found that, *First*, in the context of contribution, the indicator of the capacity of village apparatus and scope of public services have given the highest contribution to the score of VDI, followed respectively by the indicator of the family prosperity in the village and the indicator of the public education of village. *Second*, in the context of correlation between VDI and the each indicator which constructing the VDI, the indicator of infrastructure of transportation and communication in the village has the highest correlation to the VDI compared the other indicators. *Third*, by categorizing of 391 villages in Klaten Regency into 8 (eight) typologies of villages, there have been found that the other villages categories have the highest score of VDI compared the other categories. *Fourth*, in general, villages that its residents went-out from the village were higher than its residents that come-in into the villages (net-out migration) has higher score of VDI. The villages which have a negative net migration (in-migration is less than out-migration), they would have a higher score of VDI. Finally, the villages that women residents were higher than its men residents (sex ratio was less than 100) has higher score of VDI. The villages which have a sex ratio were less

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[1)]Preliminary draft for presentation in the 38th Conference of the Federation of ASEAN Economic Associations (FAEA) to be held in Singapore from 27th-29th November 2013. This paper was part of the research funded by the Ministry of Culture and Education of Indonesia in Year 2012/13. This paper can be categorized into the matter of Public Economics and Public Policy.

than 100 (the number of men was less than the number of women), they would have a higher score of VDI.

From this study, it shows that implications of the village development can have different characteristics. It depends on the conditions of each villages in the specific area. However, it can be concluded that the effort of constructing the model for measuring the progress of village development 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: Rural Development, Index System, Typologies of the Villages, Indicator of Village Development, Central Java - Indonesia

JEL Classification: r12, r58

I. INTRODUCTION

We have known that the real 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 developing the 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.

Morris (1979) used two main indicators, health indicator and education indicator. 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 indicator of income indicated by GDP corrected by Power Purchasing Parity (PPP).

In recent years, there are a lot of composite index 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 UNHABITAT (2002) for the Global Campaign on Urban Governance; Environmental Sustainability Index (ESI) developed by Yale University (2005); Indicators of Sustainability Development

(ISD) construced by United Nations (2007); and also the Vulnerability and Resilience Index (VRI) developed by Malta University (2008).

On the others hand, BAPPENAS (Indonesia - State 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 3 (three) indicators to construct the RDI, namely: (i) Indicator of government's capacity and capability; (ii) Indicator of regional development; and (iii) Indicator of public empowernment. Each of indicators was derived again into 3 (three) Sub-Indicators.

By using the RDI, progress and evaluation on regional development could be measured and evaluated together, so RDI was able to provide some useful information about the progress of regional development at provincial level or the others levels. This study wanted to develop the RDI model that had been developed by Wang (2007) and Bappenas (2001) for the context of village government by doing adjustment to some indicators and variables used in this study. This index would be called the Village Development Index (VDI).

VDI is very important to evaluate the result of development in Indonesia, especially in the villages context. This is necessary to be developed, because in recent years, the government of Indonesia has increased of expenditures from central to local pass through national budget on infrastructure, education, health and the other sectors via the General Allocation Grant (DAU: Dana Alokasi Umum) and also via the specific allocation grant (DAK: Dana Alokasi Khusus). Those grants have been allocated toward to regional governments (provinces, regencies, and cities).

In addition, the development of administrative regions in Indonesia based on Statistics Indonesia (2012) has amounted to about 399 districts, 98 cities, 6,793 sub-districts and also 79.075 villages and urban villages. Efforts in preparing the Village Development Index (VDI) which used an example in a particular area, the results can be replicated in the others areas in Indonesia at the future.

The purpose of this study was to construct VDI for measuring and evaluating the progress of villages development in Indonesia. Besides that this study was also to analyze the differences of VDI by viewing the differences of 8 (eight) typologies of

the village and integrating 2 (two) control variables into the VDI model. The available secondary data published by Statistics Indonesia on the document of Sub-District in the Vigures (Kecamatan Dalam Angka) year 2012 in Klaten Regency, would be used to construct the VDI.

This paper will be classified into 6 (six) sections. In Section II will be established of the VDI and indicators selection strategies. In Section III will be described about methodology, Section IV will be described about the data used in this study. Section V presents the result of study, and Section VI is a short summary of some interesting points.

II. VDI AND INDICATOR SELECTION STRATEGIES

VDI was constructed by using 9 (nine) indicators, namely: (i) village apparatus capacity and scope of public services, (ii) village's asset and finances; (iii) village economic infrastructure; (iv) village transportation and commu-nication infrastructure; (v) village institution and public participation, (vi) village public prosperity, (vii) village public education, (viii) village public health, and finally (ix) village family prosperity.

Each of 9 (nine) indicators directly presents a certain field of develop-ment in the village government, and they will together constitute to the VDI. Each indicator consists of several variables, which are based on one or more basic secondary data published by Statistics Indonesia Year 2012. This study used about in total of 37 basic variables. Technical explanation of the indicators and several variables used in this study can be described as follows:

1. **The Capacity of Village Apparatus and Scope of Public Service**
   a. Ratio of the number of village government apparatus to the number of village population times by 1,000
   b. Ratio of the number of village government apparatus to the number of village households times by 1,000
   c. Ratio of the number of village government apparatus toward the land area of village
2. **The Finance and Asset of Village**
   a. Ratio of the village fund allocation to the number of households
   b. Ratio of the land and building taxes to the number of households
   c. Ratio of the village revenue in the village budget to the number of households

d. Ratio of the village land ownership to the number of households times by 1,000

3. **The Economic Infrastructure of Village**
   a. Ratio of the number of trade and financing facilities to population multiplied by 1,000
   b. Ratio, micro small and medium enterprises to population multiplied by 1,000
4. **The Infrastructure of Transportation and Communication in the Village**
   a. Ratio of the number of cars and motorcycles to the number of households times by 100
   b. Ratio of the number of telecomunication facilities to the number of households times by 100
5. **The Number of Village Institution and Public Participation Rate**
   a. Ratio of the number of mutual assistance association in the village (RW: Rukun Warga) to the number of population multiplied by 1,000
   b. Ratio of the number of neighborhood association (RT: Rukun Tetangga) to the number of population multiplied by 1,000
   c. Ratio of the number of worship facilities (house for religius service) to the number of population multiplied by 1,000
6. **The Public Prosperity of Village**
   a. Ratio of the number of paddy production to the number of population
   b. Percentace of poor people to the number of households
   c. The number of the divorce event during 1 year in the village
   d. Ratio of the number of animal husbandry / animal livestock to the number of households
   e. Ratio of the number of poultry livestock to the number of households
7. **The Public Education of Village**
   a. Ratio of the number of primary school building to the number of pupils times by 100
   b. Ratio of the number of pupils to the number of teachers in primary school level
   c. Ratio of the number of pupils in primary school to the number of school age population 7-12 years times by 100
   d. Percentage of population with educational attainment in senior high school and over to number of population age 5 year over
8. **Public Health of Village**
   a. Ratio of the number of health facilities to the number of population times by 1,000
   b. Ratio of the number of medical staff to the number of population times by 1,000
   c. Percentage of the number of latrine/toilet ownership by family to the number of households
   d. Infant bird rate per 1.000
   e. Infant mortality rate per 1,000

9. **Family Prosperity of Village**

   a. Ratio of the number of population to the number of households
   b. Dependency ratio (percentage of the number of unproductive population to the number of productive population)
   c. Percentage of the number of permanent house ownership by family to the total number of house ownership in the village.
   d. Percentage of the number of active family planning acceptor to the number of the married couple in fertility condition.

III. METHODOLOGY

For constructing the VDI as an instrument for measuring the progress of village development at autonomy in Indonesia, it was used about 391 villages in 25 sub district in Klaten Regency, Central Java – Indonesia as a pilot project.

Data used in this study was secondary data publised by Statistics Indonesia in Klaten Regency (Central Java – Indonesia) in year 2012. Administratively, Klaten Regency was devided into 26 sub-districs and about 391 villages. According to Statistic Indonesia (2010) in the survei of villages potential data, villages in Klaten could be classified into 8 (eight) villages typologies (see Table 3.1 and Vigure 3.1 below).

Table 3.1 The Villages in Klaten Regency which Categorized by Typology of Villages, Year 2010

No.	Kinds of Typologies of Villages	Number	Percent
(1)	(2)	(5)	(6)
01.	Agriculture of Paddy (Pertanian Padi)	300	76.7
02.	Agriculture of Crops (Pertanian Palawija)	28	7.2
03.	Livestock / Husbandry (Peternakan)	4	1.0
04.	Mining and Quarrying (Pertambangan dan Penggalian)	6	1.5
05.	Manufacturing Industry (Industri Pengolahan)	15	3.8
06.	Wholesale, Retail and Restaurants (Perdagangan Besar, Eceran dan Rumah Makan)	12	3.1
07.	Services (Jasa)	18	4.6
08.	Others (Lainnya)	8	2.0
	Total Sampel	**391**	**100**

Source: Statistics Indonesia, Klaten Regency (2010)

Vigure 3.1 The Map of Central Java – Indonesia Divided into 29 Regencies and 6 Cities Year 2012

Indonesia (2012)
- 33 Provinces
- 399 Regencies
- 98 Cities
- 6,652 Subdistricts
- 77,012 Villages

Central Java (2012)
- 29 Regencies
- 6 Cities
- 573 Subdistricts
- 8,578 Villages

Klaten Regency
- 26 Subdistricts
- 391 Villages

(a) 300 Paddy Vill.
(b) 28 Crops Vill.
(c) 4 Livestock
(d) 6 Mining & Quarrying
(e) 15 Manufact.
(f) 12 Wholesale Retail & Restorant
(g) 18 Services
(h) 6 Others

By using 9 (nine) indicators to construct the VDI and applying it into 8 (eight) kinds of villages typologies, this study wanted to analyze the differences in the progress of village development indicated by VDI, if they were viewed by differences in the typologies of the villages. At the same time, 2 (two) control variables were also integrated into this model.

As the same as with the method used by Wang (2007), the authors also used the index system for constructing the VDI. It measured the levels of development in different dimensions based on available secondary data in the villages and also focuses on the relative position of each village to the others.

To derive aggregated field indexes and the overall index (the VDI), data need to be normalized, so all the basic indicators are transformed into a 0-10 score. The scores 0 and 10 indicate the positions of the relevant villages at the 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)):

$$I^{th}\ \text{village} = \frac{V_i - V_{min}}{V_{max} - V_{min}} \times 10 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.1)$$

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

$$I^{th}\ \text{village} = \frac{V_{max} - V_i}{V_{max} - V_{min}} \times 10 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.2)$$

Formulae (3.1) and (3.2) would be applied into 37 basic variables before the VDI would be resulted. An important issue related with constructing to the total index (the VDI) was how to determine the weight of each field index (9 indicators) in order to construct and get the overall index (the VDI).

In this study, authors used the simple average method for weighting the each indicator to result the VDI. This method was ever applied by Wang (2007). According to Wang (2007), when the number of indicator included was 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 VDI in term of total index, the formula could be written as follow:

$$VDI_{(i)} = \sum_{j=1}^{9} a.\,Indic._{(ij)} \quad \text{..... (3.3)}$$

Where:

VDI	:	The Village Development Index
i	:	Village for i
Σ	:	Sum of overall indicators
j	:	Indicator for j
a	:	weight by using tha simple average method
Indic.	:	Overall Indicators (9 indicators)

To achieve the goals of this study, 3 (three) instruments of statistical analyses would be applied, that were: (i) the correlation of product moment analysis, (ii) One Way Anova (analysis of variance), and (iii) two ways anova. The correlation of product moment would be used to know the degree of correlation between the value of VDI and the value of each indicator constructing VDI. One Way Anova would be used to analysis the differences of VDI in average viewed by the differences of the village typology. And, finally Two Ways Anova would be applied to get some interesting information about the differences of VDI in average if some control variables integrated into the VDI model previously.

IV. DATA

The data used in this study were taken from the publication of the Statistics Indonesia in year 2012 which contains some village data in year 2011. Description of the data which forming the Village Development Index (VDI) in Klaten Regency, can be seen in the following table:

Table 4.1 The Indicators which Constructing the Village Development Index (VDI) by Using the Sampel of 391 Villages in Regency of Klaten Year 2011

Indicator 1: The Capacity of Village Apparatus and Scope of Public Service				
Types of variables	Apparatus village (people)	Population (people)	Household (Head of Family)	Area (km2)
The value of mean	*7*	*3,187*	*872*	*1.66*
Indicator 2: The Finance and Asset of Village				
Types of variables	Alocation Fund for Villages (Million)	Allocation Fund for Villages / Household (Thousand)	Tax on Land and Building / Household (Thousand)	Land Tenure of Village (Hectares)
The value of mean	*49.0*	*63.0*	*43.9*	*6.6*
Indicator 3: The Economic Infrastructure of Village				
Types of variables	Number of Facilities Trade and Financial Institutions (units)		Number of Small and Medium Industry (units)	
The value of mean	*39*		*62*	
Indicator 4: Infrastructure of Transportation and Comunication in the Village				
Types of variables	Number of Motor Vehicles (units)		Number of Telecommunication Facilities (units)	
The value of mean	*397*		*658*	
Indicator 5: The Numbers of Village Institution and Public Participation Rate				
Types of variables	The Number of Pillars of Citizens (units)	The number of Neighborhood Association (unit)	Number of Places of Worship (units)	Ratio of Population and Places of Worship
The value of mean	*10*	*24*	*14*	*294*
Indicator 6: The Numbers of Public Prosperity of Village				
Types of variables	Total Rice Production (tons)	Percentage of Poor People (%)	Number of Divorce (people)	Number of Livestock (units)	Number of Poultry (units)
The value of mean	*21.9*	*47.62*	*3*	*855*	*3,126*
Indicator 7: The Villages Public Education					
Types of variables	Number of Primary School Building (unit)	The Number of Elementary School Students (Pupils)	Net Primary School Enrollment Ratio (%)	The Number of Teacher of Elementary School (people)	Percentage of the High School Graduates to the Total of Population (%)
The value of mean	*1.9*	*247*	*95.27*	*20*	*12.23*
Indicator 8: The Villages Public Health					
Types of variables	The number of medical building (unit)	The number of medical personnel (people)	The number of Latrine owened by household (unit)	The number of Infant Vertility Rate (Per 1,000)	The number of Infant Mortality Rate (Per 1,000)
The value of mean	*2.6*	*3.1*	*459*	*8.5*	*6.3*
Indicator 9: The Villages Public Health					
Types of variables	Family Members (people)	Dependency Ratio (%)	Ratio of Permanent Houses (%)	Electricity Ownership Ratio (%)	Percentage of Active Participants to Family Planning (%)
The value of mean	*3.8*	*51.69*	*75.75*	*75.59*	*76.86*

Control Variables: Net Migration Variables and Sex Ratio Variables	
- Variable of Net Migration (sign (-) , indicates that the numbers of out-migration are more than in-migration)	-0.48
- Variable of Sex Ratio (in term of mean value, it means that the number of population of men is more than pupulation of women)	98.06

Source: Statistics Indonesia. (2012). The Sub-District in the Vigures (Kecamatan Dalam Angka), Klaten Regency.

V. RESULT OF STUDY

By using the secondary data published by Statistics Indonesia in Klaten Regency (2012), from the Table 5.1 (column 5), we can see that the value of each indicators which constructing the Village Development Index (VDI) aren't the same. The indicator of the Capacity of Village Apparatus and Scope of Public Service (IKAJPP) have given the highest contribution to the VDI, followed respectively by the indicator of the family prosperity in the village (IJAHKEL) and the indicator of the public education of village (IDIKMAS). Detailed descriptions can be seen in the following table.

Table 5.1 Descriptive Statistics of Indicators and the Village Development Index (VDI) in Klaten Regency Year 2011

Indicators and Total Index	N	Mini-mum	Maxi-mum	Mean	Std. Deviation
(1)	(2)	(3)	(4)	(5)	(6)
1. IKAJPP (Indicators of Apparatus Capacity and Public Services)	391	2.4647	9.7126	**7.0346 (1)**	1.2267
2. IKAKUD (Indicators of Wealth and Financial Village)	391	0.6294	7.6879	**2.1946 (8)**	0.8885
3. ISAPER (Indicators of Villages Economy)	391	0.4361	6.5681	**2.1902 (9)**	0.8913
4. ISTRANT (Indicators of Villages Transpor. and Telecommunicat.)	391	0.1212	8.2000	**2.5488 (7)**	1.5597
5. IGAPMAS (Indicators of Institu. and Village Society Participation)	391	0.6900	6.7800	**3.3670 (6)**	1.1181
6. IJAHMAS (Indicators of Social Welfare)	391	2.9836	8.1016	**5.1607 (4)**	0.8512
7. IDIKMAS (Indicators of Public Education)	391	2.6199	8.5552	**5.7019 (3)**	0.8550
8. IKESMAS (Indicators of Public Health)	391	1.4778	6.4324	**3.5672 (5)**	0.7764
9. IJAHKEL (Indicators of Family Welfare)	391	3.5501	7.9117	**6.0140 (2)**	0.9260
Village Development Index (VDI)	**391**	**3.4866**	**5.2973**	**4.1977**	**0.3068**

Source: The Results of Secondary Data Processing with SPSS Program (2013)

If the value of each indicator which constructing the VDI was correlated with the score of VDI, it would be resulted the parameters like the Table 5.2. From Table 5.2, we can see that the indicator of infrastructure of transportation and telecommunication in the village (ISTRANT) has the highest correlation to the VDI compared the other indicators.

Second rank and third of indicators which have the highest correlation were Indicators of Wealth and Financial Village (IKAKUD) and Indicators of Social Welfare (IJAHMAS). Detailed descriptions can be seen in the following table.

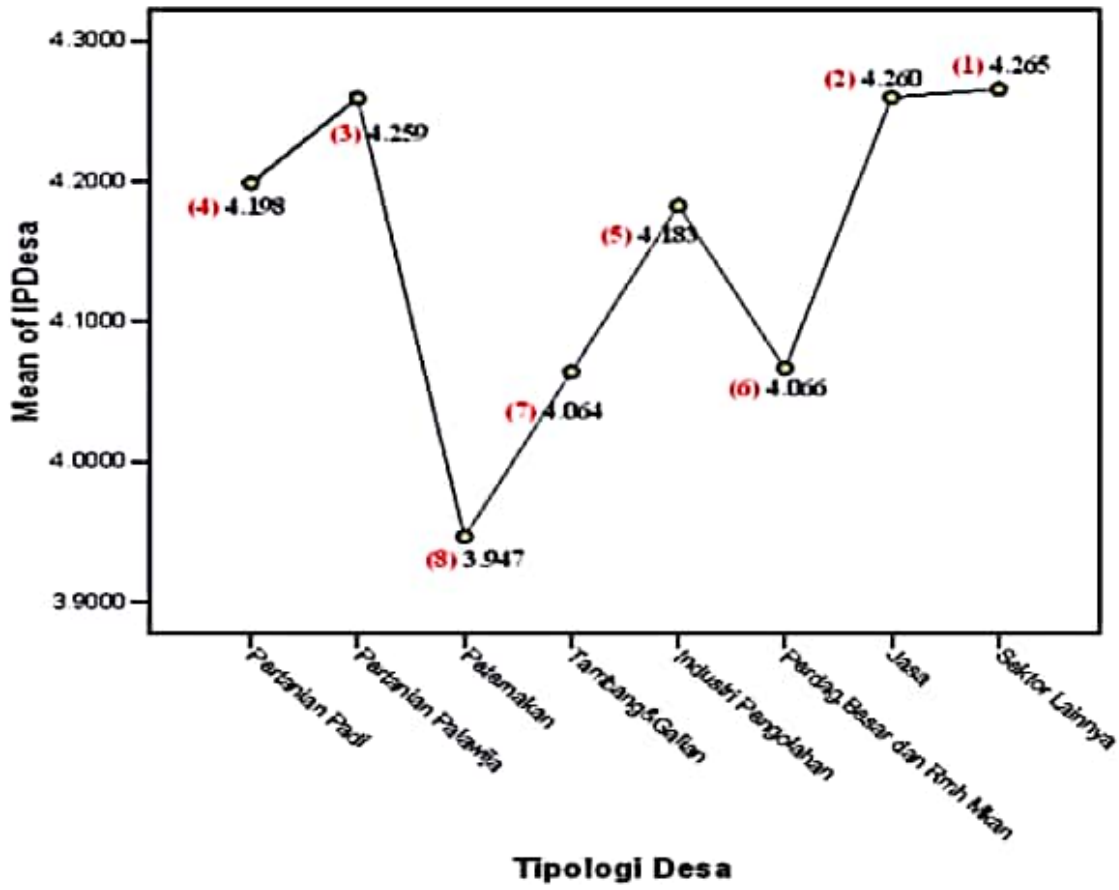
Table 5.2 Coefficient of Correlation between the Village Development Index (VDI) and Its Constituent Indicators in Klaten Regency (n-391), Central Java Province in 2011

Explanation	Value	Rank
(1)	(2)	(3)
1. IKAJPP (Indicators of Apparatus Capacity and Public Services)	-0.285[a]	6
2. IKAKUD (Indicators of Wealth and Financial Village)	**0.531**[a]	**2**
3. ISAPER (Indicators of Villages Economy)	0.275[a]	7
4. ISTRANT (Indicators of Villages Transportation and Telecommunications)	**0.621**[a]	**1**
5. IGAPMAS (Indicators of Institutional and Village Society Participation)	0.330[a]	5
6. IJAHMAS (Indicators of Social Welfare)	**0.430**[a]	**3**
7. IDIKMAS (Indicators of Public Education)	0.241[a]	8
8. IKESMAS (Indicators of Public Health)	0.186[a]	9
9. IJAHKEL (Indicators of Family Welfare)	0.367[a]	4

Notes: [a] Degree of relationship / correlation significant at the level of 1%.

Source: The Results of Secondary Data Processing with SPSS Program (2013)

By categorizing of 391 villages in Klaten Regency into 8 (eight) typologies of villages (see Table 3.1 above), there have been found that the other villages categories (Sektor Lainnya) have the highest score of VDI compared the other categories. Detailed descriptions can be seen in the following figures.



Vigures 5.1 The Differences of the Score of VDI which Categorized According to the Typologies of Village in Klaten Regency

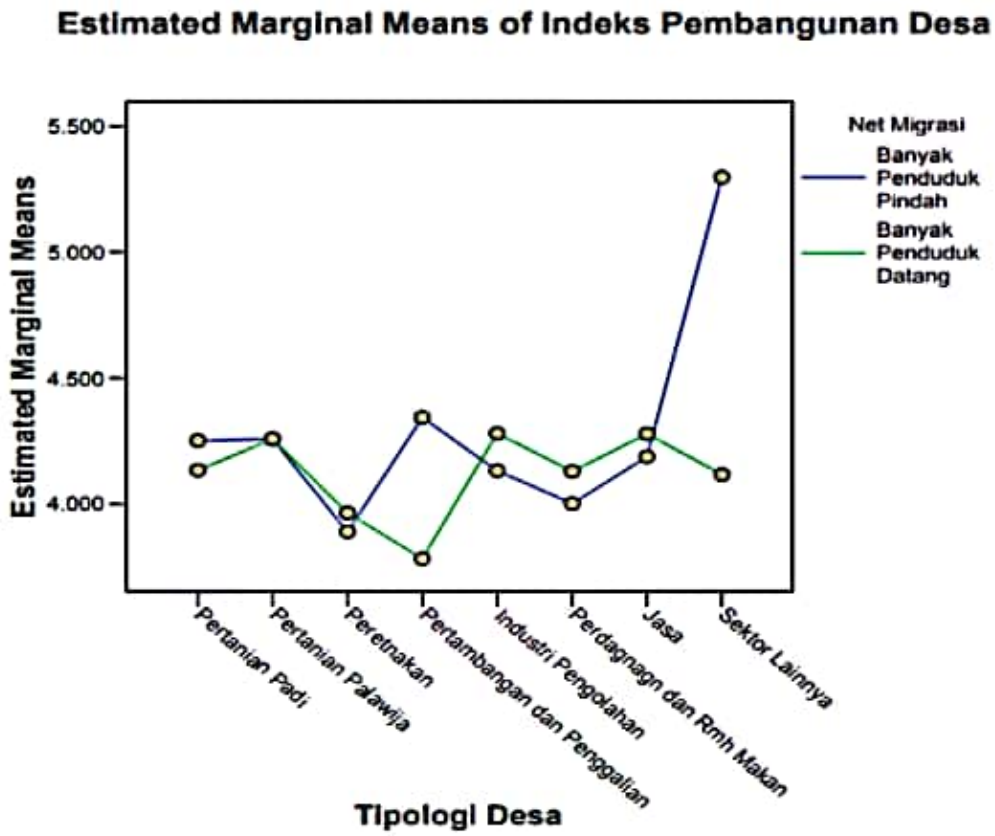
Source: The Results of Secondary Data Processing with SPSS (2013)

From Vigures 5.1 we can see that the Villages of Service [Jasa] (score 4.265) has a second rank after the village of others sector [Sektor Lainnya] (score 4.260). Meanwhile the village of Crops (Pertanian Palawija) and the villages of Paddy (Pertanian Padi) placed in rank of third (score 4.259) and rank of fourth (4.198).

By integrating 2 (two) control variables into the one way analysis, the authors find out that the model of VDI will experience many changing in the values. As stated above, 2 control variables will be integrated into the model of VDI, that are: (i) net migration variable, and (ii) sex ratio variable. Two ways analysis of variance would be applied to analyzing and to overcoming this problem.

In general, villages that its residents went-out from the village were higher than its residents that come-in into the villages (net-out migration) has higher score of VDI. The villages which have a negative net migration (in-migration is less than

out-migration), they would have a higher score of VDI (see Attachment C.3 in VDI total). A higher score of VDI, in particular incident occurred in the village of Paddy (Pertanian Padi), Mining and Quarrying (Pertambangan dan Penggalian), and Others villages (Desa Lainnya). High gap occurs in other villages. Detailed descriptions can be seen in the following figures.

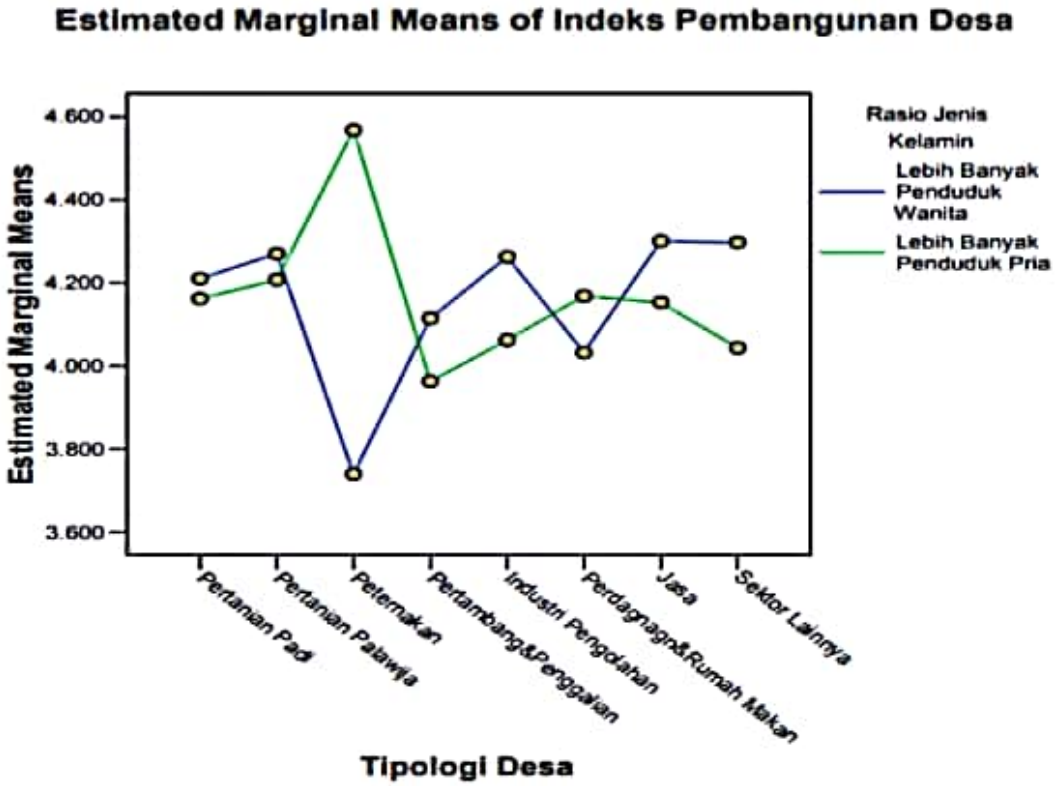


Vigures 5.2 The Differences of the Score of VDI which Categorized According to the Typologies of Village and the Variable of Net Migration in Klaten Regency

Source: The Results of Secondary Data Processing with SPSS (2013)

The villages that women residents were higher than its men residents (sex ratio was less than 100) has higher score of VDI. The villages which have a sex ratio were less than 100 (the number of men was less than the number of women), they would have a higher score of VDI (see Attachment D.3 in VDI total). High gap

occurs in the villages of Livestock / Husbandry (Peternakan). Detailed descriptions can be seen in the following figures.



Vigures 5.3 The Differences of the Score of VDI which Categorized According to the Typologies of Village and the Variable of Sex Ratio in Klaten Regency

Source: The Results of Secondary Data Processing with SPSS (2013)

VI. SUMMARY, FINDINGS AND IMPLICATION

In Indonesian context, National development policy and strategy in related with the field of regional development is to reduce the gap of development among the villages. Based on the current data, the number of villages in Indonesia (in year 2012) are about 77.012 villages which distributed into 6.652 sub districts, 98 cities, and 399 regencies (Statistic Indonesia, 2012). The increasing of the number of villages in Indonesia actually must be followed by the increasing of quality in arranging the development of villages. It is important to understand because in the villages, the public services are begun and never ending up to now.

Klaten regency is one out of 35 regencies and cities in Central Java which has a good performance in related with the management of villages development. In 2012, Klaten regency is selected as only one region among 35 regions in Central Java by national and provicial government to achieve grant funding for identifying several villages that have a high inovations.

By using 391 villages of 26 Sub-District in Klaten Regency, it has been found that, *First*, in the context of contribution, the indicator of the capacity of village apparatus and scope of public services have given the highest contribution to the score of VDI, followed respectively by the indicator of the family prosperity in the village and the indicator of the public education of village. *Second*, in the context of correlation between VDI and the each indicator which constructing the VDI, the indicator of infrastructure of transportation and communication in the village has the highest correlation to the VDI compared the other indicators. *Third*, by categorizing of 391 villages in Klaten Regency into 8 (eight) typologies of villages, there have been found that the other villages categories have the highest score of VDI compared the other categories. *Fourth*, in general, villages that its residents went-out from the village were higher than its residents that come-in into the villages (net-out migration) has higher score of VDI. The villages which have a negative net migration (in-migration is less than out-migration), they would have a higher score of VDI. Finally, the villages that women residents were higher than its men residents (sex ratio was less than 100) has higher score of VDI. The villages which have a sex ratio were less than 100 (the number of men was less than the number of women), they would have a higher score of VDI.

The VDI is very important to measure and evaluate the result of village development in Indonesia. This VDI is necessary in recent years because the government of Indonesia has increased of expenditures from central to local government (provinces, regencies, and cities). So, the VDI can be instruments for knowing the level of development in the villages context. In particular to knowing the level of equity and equality of the village development. In other hands, the instruments for measuring the progress of village development in Indonesia are very urgent to be formulated. This model must be easy to understand, simple in form and apllicable for making the policy of village development in Indonesia.

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Attachment A **Description of Value of Statistic of the Villages Development Index (VDI) Based on the Typology of Villages in Year 2011**

Typologies of Villages	N	*Mean*		Std. Dev.	Std. Error	Mini-mum	Maxi-mum
		Value	Rank				
(1)	(2)	(3)	(4)	(5)	(5)	(7)	(8)
1. Pertanian Padi	300	4.198	4	0.309	0.018	3.523	5.213
2. Pertanian Palawija	28	4.259	3	0.248	0.047	3.775	4.729
3. Peternakan	4	3.947	8	0.432	0.216	3.585	4.567
4. Tambang&Penggal. .	6	4.064	7	0.422	0.172	3.487	4.588
5. Industri Pengolahan	15	4.183	5	0.321	0.083	3.777	4.820
6. Perdag. Besar dan Rumah Makan	12	4.066	6	0.206	0.059	3.571	4.275
7. Jasa	18	4.260	2	0.243	0.057	3.790	4.634
8. Sektor Lainnya	8	4.265	1	0.435	0.154	3.949	5.297
Total	**391**	**4.198**		**0.307**	**0.016**	**3.487**	**5.297**

Source: The Results of Secondary Data Processing with SPSS (2013)

Attachment B.1 ***Levene's Test of Equality of Error Variances***[a] **(Test of Homogenity One Way ANOVA Model)**

F	df1	df2	Sig.
(1)	(2)	(3)	(4)
1.104	7	383	0.360 (sig. 40%)

Notes: Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

[a] Design: Intercept+Tip_Des

Source: The Results of Secondary Data Processing with SPSS (2013)

Attachment B.2 ***Tests of Between-Subjects Effects One Way ANOVA*** **with *Dependent Variable*: : The Village Development Index (VDI)**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
(1)	(2)	(3)	(4)	(5)	(6)
Between Groups	0.781	7	0.112	1.189	0.308
Within Groups	35.917	383	0.094		
Total	**36.698**	**390**			

Source: The Results of Secondary Data Processing with SPSS (2013)

Attachment C.1 ***Levene's Test of Equality of Error Variances***[a] **(Test of Homogenity – Two Ways ANOVA Model)**

Dependent Variable: **The Village Development Index (VDI)**

F	df1	df2	Sig.
(1)	(2)	(3)	(4)
1.207	15	375	0.264 (Sig. 30%)

Catatan: Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

[a] Design: Intercept+Tip_Des+Migras+Tip_Des*Migras

Source: The Results of Secondary Data Processing with SPSS (2013)

Attachment C.2 ***Tests of Between-Subjects Effects Two Ways ANOVA*** **with *Dependent Variable*: The Village Development Index (VDI)**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
(1)	(2)	(3)	(4)	(5)	(6)
Corrected Model	3.643[a]	15	0.243	2.756	0.000
Intercept	1,064.672	1	1,064.672	12078.731	0.000
Tip_Des	1.567	7	0.224	2.540	0.014
Migras	0.470	1	0.470	5.333	0.021
Tip_Des * Migras	1.926	7	0.275	3.121	0.003
Error	33.054	375	0.088		
Total	6,926.244	391			
Corrected Total	36.698	390			

Catatan: [a] R Squared = 0.099 (Adjusted R Squared = 0.063)

Source: The Results of Secondary Data Processing with SPSS (2013)

Attachment C.3 **Description of Two Ways ANOVA Based on Typology of Villages and Variable of Net Migration in Year 2011**

Tipologies of Villages	Net Migration	Mean	Std. Dev.	N
(1)	(2)	(3)	(4)	(5)
Pertanian Padi	Banyak Penduduk Pindah	4.252	0.315	162
	Banyak Penduduk Datang	4.135	0.291	138
	Total	**4.198**	**0.309**	**300**
Pertanian Palawija	Banyak Penduduk Pindah	4.259	0.255	12
	Banyak Penduduk Datang	4.259	0.250	16
	Total	**4.259**	**0.248**	**28**
Perternakan	Banyak Penduduk Pindah	3.891	.	1
	Banyak Penduduk Datang	3.965	0.527	3
	Total	**3.947**	**0.432**	**4**
Pertambangan dan Penggalian	Banyak Penduduk Pindah	4.344	0.224	3
	Banyak Penduduk Datang	3.784	0.400	3
	Total	**4.064**	**0.422**	**6**
Industri Pengolahan	Banyak Penduduk Pindah	4.133	0.327	10
	Banyak Penduduk Datang	4.281	0.317	5
	Total	**4.183**	**0.321**	**15**
Perdagangan dan Rumah Makan	Banyak Penduduk Pindah	4.002	0.263	6
	Banyak Penduduk Datang	4.130	0.121	6
	Total	**4.066**	**0.206**	**12**
Jasa	Banyak Penduduk Pindah	4.189	0.329	4
	Banyak Penduduk Datang	4.280	0.224	14
	Total	**4.260**	**0.243**	**18**
Sektor Lainnya	Banyak Penduduk Pindah	5.297	.	1
	Banyak Penduduk Datang	4.118	0.135	7
	Total	**4.265**	**0.435**	**8**
Total	**Banyak Penduduk Pindah**	**4.243**	**0.319**	**199**
	Banyak Penduduk Datang	**4.151**	**0.287**	**192**
	Total	**4.198**	**0.307**	**391**

Source: The Results of Secondary Data Processing with SPSS (2013)

Attachment D.1 ***Levene's Test of Equality of Error Variances***[a] **(Test of Homogenity – Two Ways ANOVA Model)**

Dependent Variable: **The Village Development Index (VDI)**

F	df1	df2	Sig.
(1)	(2)	(3)	(4)
1.133	15	375	0.324 (Sig. 35%)

Note: Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

[a] Design: Intercept+Tip_Des+Jenkel+Tip_Des*Jenkel

Source: The Results of Secondary Data Processing with SPSS (2013)

Attachment D.2 ***Tests of Between-Subjects Effects Two Ways ANOVA*** **with *Dependent Variable*: The Village Development Index (VDI)**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
(1)	(2)	(3)	(4)	(5)	(6)
Corrected Model	1.791[a]	15	0.119	1.283	0.210
Intercept	987.227	1	987.227	10,605.762	0.000
Tip_Des	0.262	7	0.037	0.403	0.901
Jenis Kelamin	0.002	1	0.002	0.024	0.878
Tip_Des * Jen. Kel.	0.822	7	0.117	1.261	0.268
Error	34.907	375	0.093		
Total	6,926.244	391			
Corrected Total	36.698	390			

Catatan: [a] R Squared = 0.049 (Adjusted R Squared = 0.011)

Source: The Results of Secondary Data Processing with SPSS (2013)

Attachment D.3 **Description of Two Ways ANOVA Based of the Typology of Village and Sex Ratio in 2011**

Tipologies of Villages	Condition of Sex Ratio	Mean	Std. Dev.	N
(1)	(2)	(3)	(4)	(5)
Pertanian Padi	Lebih Banyak Penduduk Wanita	4.210	0.318	227
	Lebih Banyak Penduduk Pria	4.162	0.280	73
	Total	**4.198**	**0.309**	**300**
Pertanian Palawija	Lebih Banyak Penduduk Wanita	4.270	0.260	23
	Lebih Banyak Penduduk Pria	4.208	0.195	5
	Total	**4.259**	**0.248**	**28**
Perternakan	Lebih Banyak Penduduk Wanita	3.740	0.153	3
	Lebih Banyak Penduduk Pria	4.567	-	1
	Total	**3.947**	**0.432**	**4**
Pertambangan dan Penggalian	Lebih Banyak Penduduk Wanita	4.115	0.460	4
	Lebih Banyak Penduduk Pria	3.963	0.476	2
	Total	**4.064**	**0.422**	**6**
Industri Pengolahan	Lebih Banyak Penduduk Wanita	4.263	0.358	9
	Lebih Banyak Penduduk Pria	4.062	0.233	6
	Total	**4.183**	**0.321**	**15**
Perdagangan dan Rumah Makan	Lebih Banyak Penduduk Wanita	4.032	0.219	9
	Lebih Banyak Penduduk Pria	4.169	0.141	3
	Total	**4.066**	**0.206**	**12**
Jasa	Lebih Banyak Penduduk Wanita	4.301	0.196	13
	Lebih Banyak Penduduk Pria	4.153	0.339	5
	Total	**4.260**	**0.243**	**18**
Sektor Lainnya	Lebih Banyak Penduduk Wanita	4.297	0.460	7
	Lebih Banyak Penduduk Pria	4.044	-	1
	Total	**4.265**	**0.435**	**8**
Total	**Lebih Banyak Penduduk Wanita**	**4.211**	**0.316**	**295**
	Lebih Banyak Penduduk Pria	**4.157**	**0.274**	**96**
	Total	**4.198**	**0.307**	**391**

Source: The Results of Secondary Data Processing with SPSS (2013)