The Role of Accessibility for Agricultural Development in Kampung Cicayur, Desa Cimenyan, Bandung District

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Abstract

In rural areas, accessibility (which is characterized by the presence of roads, transportation, topography, distance, time and cost) is one factor that can stimulate the growth of agricultural development (in this case characterized by the presence of markets, technology, information, production facilities and capital) . Several studies have been carried out to see the extent of the relationship between transportation and accessibility, and the effect of accessibility on the socioeconomic characteristics of rural communities. And the results of the study stated that transportation affects agricultural development and accessibility affects the socioeconomic characteristics of rural communities. For this reason, the authors are interested in examining the extent of the effect of accessibility on agricultural development. The purpose of this study is to find out how the role of accessibility to agricultural development is and to outline the factors that influence agricultural development in Kampung Cicayur, Cimenyan Village, Bandung regency. The research approach used is a quantitative research approach. The analytical method used in this study is a simple regression analysis. Based on the results of the analysis it can be concluded that accessibility with indicators of the road network, transportation, topography, distance, time and cost affect the development of agriculture which has market, technology, information, production facilities and capital indicators. The influence is 59.9% or moderate category, and the rest is still quite large (40.1%) is another variable or factor that also affects agricultural development. These variables or other factors can be used as further research plans.

Keywords: Accessibility, Agricultural Development, Transportation, and Rural

1. INTRODUCTION

Increasing the productivity of the agricultural sector to improve the welfare of farmers and support food sovereignty is a strategic issue in the development of West Java Province. This was revealed in the West Java Provincial Musrenbang in Bandung on April 2, 2015. Some important things recommended by the Deputy for Regional Development and Regional Autonomy of the Ministry of PPN / Bappenas include: improving the quality of infrastructure, especially roads and electricity networks, increasing the intermediation function regional banks to encourage access to business capital (investment) and the mastery of appropriate technology.

Farida (2013) said that development in Indonesia tends to favor urban development rather than rural development, resulting in a gap in growth and infrastructure and economic development between villages and cities. The lack of village infrastructure is one of them in the field of transportation and roads that make it difficult for rural communities to access other villages and cities (Miro, 2004). Whereas transportation is an important thing in rural areas, because it can stimulate the growth of markets and

economic centers in villages. The condition of village roads to agricultural sites is still a dirt road that is difficult to pass by motorized vehicles and prone to landslides when it rains. With such road conditions make the distance longer and affect the yield of agricultural production. Transporting agricultural products is usually by motorcycle, sometimes transported without vehicles, so the transport capacity is very limited. Other access factors include the sloping and steep topographic characteristics that make the mileage longer Sumaatmadja (1988). Usually the success of rural agriculture strategies will involve a component of agricultural development in the form of an increase in the agricultural production sector (Nchuchuwe and Adejuwo, 2012).

This condition also occurs in the Cicayur village area, Cimenyan Village, Cimenyan sub-district, Bandung district. The agricultural potential in Cicayur village is very large because it is supported by the vast agricultural area. Communities in Cicayur village, which are mostly farmers, are certainly very dependent also on the existing transportation system and will have an impact on rural activities, especially transportation of agricultural products.

Previous studies discussing transportation, accessibility, socio-economic characteristics of rural communities, village development and agricultural development shown in Table 1:

Table 1. Results of Research on Accessibility and Agricultural Development

No	Reseacher (Year)	Dimention/ Indicator	Research Conclusion
1	Madziatul Churiyah (2006)	Agricultural development and development of agropolitan areas	Requirements for agricultural development: markets, technology, materials and means of production, the stimulation of production, and the smooth and sustainable transportation. Facilitating means: Farmer education and development, production credit, mutual cooperation, land improvement and expansion, and national planning of agricultural development.
2	Nurfaina Syarif (2010)	Transportation, road conditions, transportation equipment, mileage, and transportation costs / costs and agricultural development	Rural transportation which includes road conditions, transportation equipment, distance traveled, and transportation costs / costs affect agricultural development. The road network is a variable that is very influential on the production of the agricultural sector, the plantation sector, and the livestock sector.
3	Umrotul Farida (2013)	Accessibility is explained by the variables Distance, Time Location, The existence of public transportation, road conditions and altitude.	The influence of the level of accessibility on social conditions is still relatively weak.
4	M Taufik Ismail Lbs, Lily Fauzia dan M Jufri (2014)	Supporting factors for agricultural development are the existence of markets, technology, materials and means of production, the stimulation of production, and the smooth and continuous transportation.	There is a significant relationship between the technology market, materials and means of production, the existence of stimulants of production, and the smooth and continuous transportation of production.

Source : Data processed, 2020.

From the table above it can be seen that there are two main variables in research on rural and rural issues, namely Accessibility and Agricultural Development. From Table 1 above, the author sees that there is still a gap to conduct research, that is, to look for the relationship or influence of accessibility on agricultural development. Therefore, to complement the previous research, the authors are interested in examining the role of accessibility in agricultural development.

2. METHODOLOGY / RESEARCH METHODS

2.1 Sample and data collection.

The population of this study was as much as +/- 235 households in the Rural Area of Cicayur village in Cimenyan Village, Bandung District, and the sample was distributed randomly to 70 households. The distribution of the questionnaire was carried out on December 22, 2019. And to measure the questions of each variable, this study used a multi-scaling method Likert Scale (5- points).

2.2 Research Methods and Data Analysis

This research uses quantitative methods while the type of research is descriptive and verification. The quantitative method by referring to Sugiyono (2013), is used to examine specific populations and samples, the collection of data using research instruments, analysis of quantitative / statistical data, with the aim of testing established hypotheses. In this study data processing was conducted with SPSS Statistics Version 25.

2. LITERATURE REVIEW

3.1 Accessibility

Warpani (2002), defines accessibility as the level of ability to achieve or obtain the goods and services needed. Meanwhile, according to Parikesit (2002), access is the level of difficulty or ease of population to obtain goods or services needed.

Elements of Accessibility
Some opinions regarding accessibility have been conveyed by several experts including Miro (2004), who stated that the accessibility variable is the availability of the road network, the number of means of transportation, the availability of long roads, road width, and road quality. Then Ellis (1997), states that an area is also strongly associated with infrastructure in the form of a road network, transportation and facilities used to use it in this case the existence of transportation facilities. Setiawan (2006) argues that the importance of the transportation system in rural areas, making accessibility a determinant of rural development. And there is an interesting statement conveyed by Sumaatmadja (1988) in Parlindungan (2010), stating that in determining accessibility, topographic factors can also affect the function of low accessibility. This is because the topography can be a barrier for fluency in conducting interactions in an area. Finally Umrotul Farida (2013) states that accessibility is related to distance of location, time and cost.

Thus the important factors in accessibility are the road network, transportation system, topography, distance, time and cost.

3.2 Agricultural Development

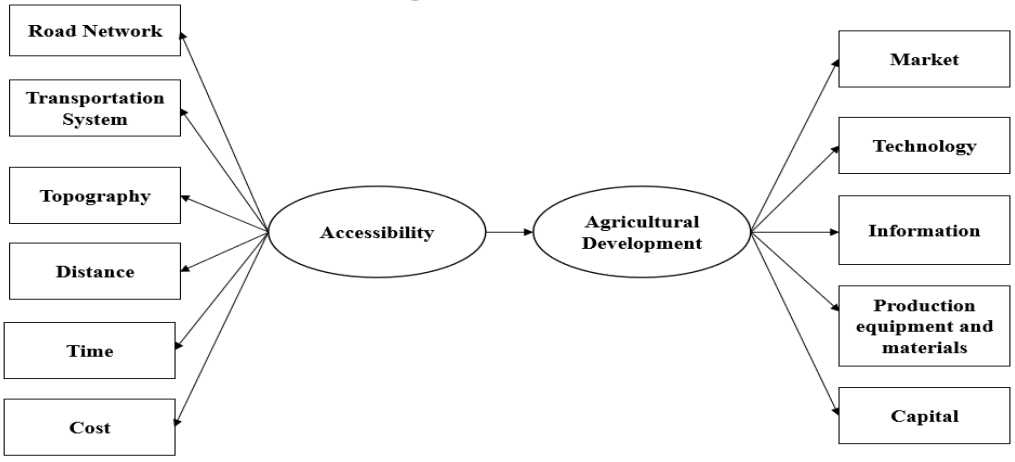
Soedarsono Hadisapoetro (1975) states that agricultural development is a process to always increase agricultural production of farmers, while at the same time increasing the income and productivity of farmers' businesses, carried out by increasing capital and skills. By Arthur Mosher (1965) in his book Getting Agriculture Moving, stated that agricultural development is an integral part of economic development and society in general consisting of: markets, technology, materials and means of agricultural production, stimulating production for farmers and smooth and continuous transportation **(Ismail, Fauzia and Jufri, 2014).**

Elements of agricultural development.
According to Nurfaina Syarif (2010) agricultural development includes advanced technology, easy markets, and the availability of materials and means of production, all of which provide opportunities for farmers to increase production. The availability of a smooth and sustainable transportation guarantees an extensive transportation network to bring production equipment to each farming business, and to bring agricultural products to consumers in the city. Without efficient and inexpensive transportation, the other four absolute conditions cannot be carried out effectively, because agricultural production must be widespread. Setiawan (2006) states that in rural space, accessibility is indirectly related to aspects of social welfare and economic aspects. This accessibility can be interpreted as the ability of rural communities to reach productive resources which include: capital, information, means of production and markets.

Thus it can be concluded that the important variables in agricultural development are markets, technology, information, materials and means of production and capital. And to test the relationship between accessibility and agricultural development, the following hypotheses can be built:
-H0: There is no significant effect of Accessibility on Agricultural Development
-H1: There is a significant effect of Accessibility on Agricultural Development

The research model created can be seen in Figure 1 below:

Figure 1 Research Model



4. RESULTS AND DISCUSSION

4.1. Respondents Profile

Table 2. Respondents Profile

No	Characteristics of Respondents	Frequency	%
1	Gender :		
	- Man	47	65
	- Woman	23	35
	Total	70	100
2	Age :		
	- Above 45 years	22	30
	- 36 - 45 years	22	30
	- 26 - 35 years	21	24
	- Until 25 years	5	16
	Total	70	100

Source : Data processed, 2020.

4.2 Normality Test

Table 3. Normality Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		70
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	2.81293266
Most Extreme Differences	Absolute	.094
	Positive	.059
	Negative	-.094
Test Statistic		.094
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Source: Statistics Processing Results,2020

Asym.Sig Value. (2 tailed) of 0.200 means > 0.05 so that the data meet the normal distribution.

4.3 Test Validity.

For respondents 70 households, the minimum value of r table is r = 0.235. The following can be seen in the table below test the validity of the question items for each variable as follows:

Table 4 Test Results of Validity of Accessibility Variables (X)

Variable	Value of R Count	Value of R Table	Value of sig.	Decision
X1.1	0,421	0,235	0,000	Valid
X1.2	0,559	0,235	0,000	Valid
X1.3	0,667	0,235	0,000	Valid
X1.4	0,734	0,235	0,000	Valid
X1.5	0,707	0,235	0,000	Valid
X1.6	0,618	0,235	0,000	Valid

Source: Statistics Processing Results 2020.

Thus the statement in the Accessibility variable instrument above consisting of 6 items is declared to be all valid and truly as an Accessibility indicator.

Table 5 Test Results of Validity of Agricultural Development Variables (Y)

Variable	Value of R count	Value of R table	Value of sig.	Decision
Y1.1	0,509	0,235	0,000	Valid
Y1.2	0,667	0,235	0,000	Valid
Y1.3	0,627	0,235	0,000	Valid
Y1.4	0,758	0,235	0,000	Valid
Y1.5	0,385	0,235	0,000	Valid

Source: Statistics Processing Results 2020

Thus the statement in the Agricultural Development variable instrument above consisting of 5 items is declared to be all valid and truly as an indicator of Agricultural Development.

4.4 Reliability Test

Based on the results of reliability testing of the accessibility variable, the following results are obtained:

Table 6 Reliability Test Results for Accessibility Variables (X)

No	Variable	Score	Critical R	Category
1	Aksesibilitas	0,882	0,60	Reliabel

Source: Statistics Processing Results, 2020

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From the reliability test results above, it appears that the Accessibility variable includes a reliable category, because the score is 0.882 which means > 0.60. Based on the results of reliability testing of Agricultural Development variables, the following results are obtained:

Table 7 Results of Reliability Tests for Agricultural Development Variables (Y)

No	Variable	Score	Critical R	Category
1	Agricultural Development	0,801	0,60	Reliable

Source: Statistics Processing Results 2020

Reliability test results above, states that the Accessibility variable includes a reliable category, because the score is 0.801 which means> 0.60.

4.5 Results of Linear Regression Analysis

Table 8. Results of Linear Regression Analysis

b. Dependent Variable: YTotal

Coefficients[a]

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	3.491	1.062		3.287	.002
XTotal	.600	.059	.774	10.089	.000

a. Dependent Variable: YTotal

Source: Statistics Processing Results 2020

It is obtained regression equation: Y = 3.491 + 0.6X
Constant of 3.491 states that if there is no Accessibility value, the value of Agricultural Development is 3.491. The regression coefficient X of 0.600 states that each addition of 1 Accessibility value, the value of Agricultural Development increases by 0.600.

4.6 Test the hypothesis.

Testing Criteria:
- H0 is accepted if t arithmetic <t table
- H1 is accepted if t arithmetic> T table

Based on Table 8 above, t count of 3.287 was obtained. Table t distribution is sought at = 5%: 2 = 2.5% (2-tailed test) with degrees of freedom (df) n-k-1 or 70-1-1 = 68 (n is the number of cases and k is the number of independent variables). Obtained t table value of 1.995.
T count value of 3.287> t table (1.995), then Ho is rejected, meaning that there is a significant influence between Accessibility to Agricultural Development.

4.7 Level of significance

Table 9 Coefficient of Determination

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.774[a]	.599	.594	2.981

a. Predictors: (Constant), XTotal

Source: Statistics Processing Results 2020

The magnitude of R Square (r^2) is 0.599 meaning that the effect of Accessibility on Agricultural Development is 59.9%. The remaining 40.1% is influenced by other variables.

5. CONCLUSION

The purpose of this study is to examine the relationship between Accessibility and Agricultural Development. The results show that, Accessibility significantly influences Agricultural Development. This finding supports and complements previous research.

The effect of Accessibility on Agricultural Development is 59.9%. The remaining 40.1% is influenced by other variables. By looking at the influence of other variables by 40.1%, there is an opportunity for further research to look for other variables that affect agricultural development.

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