



An Analysis of the Extension Workers Empowerment in Pidie Jaya Regency

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Abstract

This study aims to determine the factors that affect the level of empowerment of extension workers in Pidie Jaya. The data used are primary data obtained from the results of filling out a questionnaire of 112 extension workers in Pidie Jaya. The analytical method used is using Ordinal Regression. Ordinal regression analysis is a statistical method that describes the relationship between a response variable and more than one predictor variable where the response variable is more than two categories and the measurement scale is level. The results of the study concluded that the level of empowerment of the extension workers in Pidie Jaya was significantly influenced by the socio-cultural support and supporting factors.

Keywords: *Empowerment; Ordinal Regression*

Introduction

The extension activities in agricultural development play roles as a bridge that connects the practices carried out by farmers and the ever-evolving agricultural knowledge and technology. To support the farming practices for the farmers, they need information on innovation in agriculture. This information on innovation can be obtained by farmers from Field Agricultural Extension through the implementation of agricultural extension activities.

Extension workers are the spearhead in determining the success of agricultural development. The number of extension workers in Aceh Province reached 2,845 people consisting of 1,158 civil servants, 612 candidates for civil servants, staff, and freelancers. 991 people are the agricultural extension Assistants of the National Income Expenditure and 84 trainers of Regional Revenue and Expenditure Budget (Aceh Food Service, 2017). When compared to the number of villages in Aceh with the number is 6,509, each extension worker fostered about 3 villages.

Table 1. List of Sub-Districts in Pidie Jaya Regency

Sub-Districts	Capital	Area (Km ²)	Residence	Village	Hamlet
Bandar Dua	Ulee Glee	174,32	5	45	121
Bandar Baru	Leung Putu	220,47	8	43	113
Jangka Buya	Jangka Buya	9,35	2	18	47
Meurah Dua	Meurah Dua	287,07	3	19	63
Meureudu	Meureudu	124,79	4	30	96
Panteraja	Pante Raja	15,00	2	10	30
Trienggadeng	Trienggadeng	79,37	5	27	101
Ulim	Ulim	41,75	5	30	78
Pidie Jaya		952,12	34	222	649

Source: Central Bureau of Statistics, 2018

The presence of extension workers is expected to act as agents of change in agricultural development, but in reality, many extension workers still lack the capacity when dealing with advanced farmers in their working areas. This phenomenon occurs due to the lack of extension efforts to increase self-empowerment through information updates and innovations that change rapidly in finding various solutions faced by farmers in developing their farming, Agussabti (2018).

The problem faced in agricultural extension activities in Aceh, especially in Pidie Jaya is the number of extension workers in adequate quantity but not yet sufficient in quality to achieve standardization of extension performance. As a result, many farmers thought that they only felt that there was an extension worker if there was a project assistance and that the presence of the extension worker was often considered not so important by farmers because extension workers were often judged to be less empowered in solving various problems that were being faced by farmers in the field.

Research Methods

The data used are primary data obtained from the results of filling out the questionnaire. The number of respondents in the study amounted to 112 extension workers in Pidie Jaya Regency.

The measurement technique to determine the level of empowerment of the extension workers was carried out by the scoring method. Scores are obtained from seven questions that have a score of 1-5. The scoring of the respondents' assessment criteria can be differentiated into the following scoring categories:

- Strongly Disagree is given a score of 1
- Disagree is given a score of 2
- Neutral is given a score of 3
- Agree is given a score of 4
- Strongly Agree is given a score of 5

To measure these categories, the formula for the width of the interval is used, namely:

$$i = \frac{R}{K} \dots\dots\dots(\text{Sudjana, 2005})$$

Information:

i = Length of class span

R = difference between high and low values

K = Number of classes

So:

$$i = \frac{35-7}{3} = 9,33$$

Then:

1. Score 7- 16,33 : Low Level of Empowerment
2. Score 16,34 – 25,68 : Medium Level of Empowerment
3. Score 25,69 – 35 : High Level of Empowerment

The variables used in the study can be seen in the table below:

Tabel 2. Response Variable

	Variable	Category
Y	Level of Empowerment of Extension Workers	1: Low
		2: Medium
		3: High
	Variable	Category
X ₁	Age	
X ₂	Extension Workers Status	1: Civil Servants
		2: Freelance
		3: Self-subsistent
X ₃	Financial Support	1: Strongly Disagree
		2: Disagree
		3: Neutral
		4: Agreed
		5: Strongly Agree
X ₄	Socio-Cultural Support	1: Strongly Disagree
		2: Disagree
		3: Neutral
		4: Agreed
		5: Strongly Agree
X ₅	Supporting factors	1: Strongly Disagree
		2: Disagree
		3: Neutral
		4: Agreed
		5: Strongly Agree

Results and Discussion

Questionnaire Validity Test

According to Iskandar (2008) a questionnaire can be said to be valid if the questions in a questionnaire are able to reveal something that will be measured by the questionnaire or questionnaire. The validity test is carried out to determine whether the data used is really valid, so that further analysis can be carried out. The validity of an instrument can be determined by comparing the Pearson correlation index with a significance level of 0.05. If the probability of the correlation result is less than 0.05, the instrument is declared valid and invalid otherwise, or compares the r-table with the r-count. If r-count is greater than r-table, then the instrument can be declared valid.

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2] [N \sum Y^2 - (\sum Y)^2]}}$$

Information :

r_{xy} : The correlation coefficient between X and Y

N: Number of subjects

$\sum XY$: Sum of product of X and Y values

$\sum X$: Sum of X values

$\sum Y$: Sum of Y values

$\sum X^2$: Sum of the squares of X values

$\sum Y^2$: Sum of squares of Y values

Total respondents to be tested were 112 extension respondents in Pidie Jaya. The hypothesis to be tested is as follows:

H_0 : There is no correlation between the questionnaire questions ($r_{count} < r_{table}$)

H_1 : There is a correlation between the questionnaire questions ($r_{count} > r_{table}$)

The confidence level used was 95% ($\alpha = 0.05$).

Table. 3 Results of the Regression Test of the Validity of Financial Support, Social Support, Culture and Supporting Factors

Validity Test			
Aspects	$r_{table} (n = 112)$	R_{count}	Decision
Financial Support	0,195	0,646	Reject H_0
Socio-Cultural Support	0,195	0,474	Reject H_0
Supporting factors	0,195	0,850	Reject H_0

Source: Data processed, 2020

Questionnaire Reliability Test

Reliability test is a tool to measure whether an instrument used can obtain appropriate information in the field. A questionnaire is said to be reliable if a person's answer to a statement is consistent over time. Reliability testing uses the Alpha Cronbach's formula which is listed below.

$$r_x = \left(\frac{n}{n-1} \right) \left(1 - \frac{\sum \sigma^2 b}{\sigma^2 b} \right)$$

Information:

r_x : Reliability sought

n : Number of questions

$\sum \sigma^2 b$: The number of score variants per item

$\sigma^2 b$: Total Variants

Decision making is based on if the value:

alpha < 0.50 low reliability

0.50 < alpha < 0.70 reliability is moderate

alpha > 0.70 then the reliability is sufficient (sufficient reliability)

alpha > 0.80 then the reliability is strong

alpha > 0.90, the reliability is perfect

The smaller the alpha value, the more unreliable items are. The standard used is $\alpha > 0.60$, if it is less than 0.6 then the variable question is not reliable. The reliability test in this study was carried out on the variable aspects of training, aspects of financial support, aspects of socio-cultural support, aspects of support, and aspects of empowerment.

The calculation to find the reliability level of the instrument data in this study uses SPSS. The results of the reliability test on 22 valid questions can be seen in the table below.

Table 4. Regression Results of Financial Support, Socio-Cultural Support and Supporting Factors

Aspects	<i>Alpha Cronbach</i>	Criteria	Information
Financial Support	0,847	0,6	Strong Reliability
Socio-Cultural Support	0,824	0,6	Strong Reliability
Supporting factors	0,737	0,6	Strong Reliability

Source: Data processed, 2020

Based on the results of the calculation of the reliability test, the Cronbach Alpha value for each variable in the study showed that it was greater than 0.6. This shows that the respondent's answer to the questionnaire is reliable, so it can be used for further research.

In the Reliability Statistics section, it can be seen that the Cronbach's Alpha value = 0.954 which is greater than the r table (0.632) with a significance level of 5%. This means that the questionnaire proved reliable. If the Cronbach's Alpha value is greater than r table with a significance level of 5%, then the questionnaire has a good level of reliability, or in other words, the data from the questionnaire results can be trusted.

Independence Testing

The first step in logistic regression is to perform an independence test. The independence test is used to determine the relationship between two variables. Hypothesis testing for the independence test using the Chi-square test is as follows.

Hypothesis

H_0 : There is no relationship between the two observed variables

H_1 : There is a relationship between the two observed variables

Table 5. Independence Test

Variable	Pearson Chi-Square	P-value	Decision	Information
Gender	2,779	0,249	Failed Reject H_0	Independent
Extension Status	7,156	0,128	Failed Reject H_0	Independent
Financial Support	18,552	0,022	Reject H_0	Dependent
Socio-Cultural Support	58,775	0,000	Reject H_0	Dependent
Supporting factors	20,474	0,142	Failed Reject H_0	Independent

Partial Testing

In ordinal logistic regression is to regress all predictors that are thought to have an effect on the level of extension power, to obtain a model that has significant variables.

$$H_0 : \beta_1 = \beta_2 = \dots = \beta_8 = 0$$

$$H_1 : \text{There is at least one } \beta_k \neq 0, k = 1, 2, \dots, 8.$$

Table 6. Partial Test

Variable	Category	Estimation	Wald	P-value	Odds Ratio
Gender (X ₁)	Constant (1)	-3,016	31,023	0,000	0,05
	Constant (2)	0,167	0,333	0,564	1,18
	Male	0,531	1,947	0,163	1,70
Extension Workers Status (X ₂)	Constant (1)	-3,880	8.641	0,003	0,02
	Constant (2)	-0,724	0,349	0,555	0,48
	Civil Servant	-0,648	0,264	0,608	1,91
	Freelance	-0,564	0,204	0,652	1,76
Financial Support (X ₃)	Constant (1)	-2,860	16,036	0,000	0,06
	Constant (2)	0,302	0,300	0,584	1,35
		0,059	0,738	0,390	1,06
Socio-Cultural Support (x ₄)	Constant (1)	0,599	0,320	0,572	1,82
	Constant (2)	4,091	12,199	0,000	59,80
		0,263	13,262	0,000	1,30
Supporting Factors (X ₅)	Constant (1)	-0,544	0,269	0,604	0,58
	Constant (2)	2,762	7,405	0,007	15,83
		0,129	8,418	0,004	1,14

Source: Research Results, 2020

Table 6 is the result of partial testing using SPSS. Of the 5 variables tested, there were 2 variables that had significant values, namely: the socio-cultural support variable (X₄) and the supporting factor variable (X₅).

Simultaneous Testing

In this simultaneous test, the included variables are variables that have been significant in the previous partial test, which can be seen in:

Table 7. Simultaneous Test Results

Variable	Category	Estimation	Wald	P-value	Odds Ratio
Level	Constant (1)	3,195	4,729	0,030	24,41
Empowerment (Y)	Constant (2)	6,884	17,993	0,000	976,52
Socio-Cultural Support (X ₄)		0,258	12,256	0,000	1,29
Supporting Factors (X ₅)		0,129	7,699	0,006	1,14

Source: Processed products, 2020

Based on Table 7, it can be seen that the variables that have a significant effect on the level of empowerment of extension workers in Pidie Jaya Regency are the socio-cultural support variables and supporting factors. This variable appears based on the p value <0.05, with a confidence level of 95%.

Socio-cultural support for the empowerment of agricultural extension workers is reflected in indicators, namely community leaders who support extension activities, superiors who are proactive in supporting the activities that extension workers carry out, colleagues who always support ideas and ideas from extension agents in agricultural activities, farmers always support you in extension activities.

The influence of supporting factors on the empowerment of agricultural extension workers is reflected by indicators, namely being able to speak foreign languages well, the availability of information sources in my work environment is very adequate, the availability of communication facilities for extension activities is very adequate, the availability of transportation facilities for extension activities is very adequate, has a network who are broad in the world of agriculture, have income other than salary, have more than enough income. The career path as an extension is very clear.

After knowing the variables that influence the next step is to form a logit function which is used to calculate the probability of the logit model.

$$g1 = 3,195 + 0,258(X_4) + 0,128(X_5)$$

$$g2 = 6,884 + 0,258(X_4) + 0,128(X_5)$$

After knowing the logit function, a chance calculation can be done to get a chance based on the desired variable.

The odds ratio value for socio-cultural support is 1.29 or 1.3, which means that socio-cultural support can provide an increase in the empowerment of agricultural instructors every one unit increase. The value of the odds ratio for the supporting factors is 1.14, which means that the supporting factors can increase the empowerment of the agricultural instructor every time there is an addition of one unit. This finding is in line with the results of research from Malta, et al. (2018) that socio-cultural support and supporting factors affect the level of empowerment.

Conclusion

Based on the results of the research that has been carried out, it is concluded that from the results of ordinal logistic regression, it can be seen that there are two factors that significantly influence empowerment, namely the socio-cultural support factor and supporting factors. This can be seen from the socio-cultural support odds ratio value of 1.3 times for each increase in support, while the supporting factor odds ratio value is 1.14 times for each additional support.

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