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Analysis of the relationship of soybean farmers response and income on The Pajale Special Efforts (UPSUS)

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Abstract. Soybean self-sufficiency has become the government's primary target since 2015 along with two other food commodities, namely rice, and corn. The UPSUS program (Special Efforts) is one of the efforts to support soybean self-sufficiency. Special Efforts (UPSUS) are the main program of the Ministry of Agriculture to improve the welfare of farmers. With the UPSUS, it is expected that soybean production will increase. This study aims to determine the relationship between soybean farmers' responses to farm income. The population of the study was farmers who were involved in the UPSUS Pajale Program as many as 150 people using the purposive sampling method. The data analysis used in this study is Chi-Square analysis. Chi-Square is a statistical test that is used to test hypotheses if the population consists of two or more classes where the data is categorical. The results of the study concluded that there was no relationship between the response to the Pajale Special Effort Program (UPSUS) and the income obtained by farmers.

1. Introduction

Food is one of the basic human needs. Humans can not survive without food. Therefore, the effort to fulfill food needs is a primary humanitarian endeavor. Increasing food production, especially soybeans, needs to be done considering soybeans are the main strategic food crop after rice and corn. Based on 2014 data from SUSENAS released by BPS, the average tempe consumption per person per year in Indonesia is 6.95 kg and tofu 7,068 kg. Ironically, the fulfillment of the need for soybeans, the primary raw material for tempe and tofu, 67.28% or as much as 1.96 million tons must be imported from outside [1].

Seeing this problem, the Ministry of Agriculture outlines the Special Efforts (UPSUS) to achieve sustainable rice and corn self-sufficiency and soy self-sufficiency, better known as the Pajale UPSUS program. Through this program, the government targets production to be achieved in 2015, namely rice production of 73.40 million tons with a growth of 2.21%, corn of 20.33 million tons with a growth of 5.57% and soybeans of 1.27 million tons with an increase of 26.47% [2].

Various activities formulated in the Pajale UPSUS program as an effort to achieve rice, corn, and soybean production targets include construction/repair of tertiary irrigation networks (PJIT), optimization of land and water, assistance of pre/post-harvest agricultural tools and machinery, seed and fertilizer aid, and the integrated crop management (GP-PTT) movement, integrated escort and support by extension agents, tertiary institutions (students) and the army [3].



Through the strategies and activities that have been formulated in an extraordinary effort (UPSUS) Pajale is expected to be able to assist farmers in overcoming agricultural problems in the area either through farmer courses conducted as a meeting place for farmers and extension agents, through village farmer meeting (RTD) activities and through activities other activities that have been formulated in this UPSUS program.

Pajale's special effort (UPSUS) three main food commodities are targeted in their achievements, namely rice, corn, and soybeans, but the focus of the author's research is a special effort on soybean plants. Given that this commodity provides a substantial contribution to the provision of nutritious food for humans because of the high-quality protein amino acids, balanced and complete. So it is necessary to know how the impact of this Pajale Special Efforts (UPSUS) program on the production and productivity of soybean commodities in ensuring its availability for the community. For South Sulawesi itself, soybean production centers are scattered in several districts, including Bone Regency, Soppeng Regency, and Wajo Regency¹¹

Based on the above background the purpose of this study is to determine the response of soybean farmers to the implementation of the Pajale Special Efforts (UPSUS) program, to analyze the income of soybean farmers who are not involved and those involved in the Pajale Special Efforts (UPSUS) program, to know the relationship between soybean farmers' responses to increased farm income.

2. Methods

This research was conducted in three locations, namely in Kajaolaliddong Village, Barebbo District, Bone Regency, Attang Salo Village, Marioriawa District¹², Soppeng Regency and Tancung Village, Tanasitolo District, Wajo Regency. Site selection is made by purposive sampling, namely deliberate selection with the consideration that: the location is involved in the Special Efforts Pajale program and farmer groups in the village¹³ have excellent attention to government programs. The type of data used in this study consisted of primary data and secondary data. In this study, primary data were obtained from direct interviews with respondents who were members of six farmer groups in three districts, namely Bone, Soppeng and Wajo using a questionnaire. Whereas secondary data was obtained from local agencies or institutions.

The population of the study was farmer groups involved in the UPSUS Pajale Program and farmer groups who were not included in the UPSUS Pajale program, with 25 members of each farmer group so that the number of respondents was 150 people using the census method. Census method is a complete data collection method in which all elements in the population that are the object of research are investigated/enumerated one by one. Census is carried out if all elements/members are observed and the results are actual data (parameters) [4].

⁹ To find out the relationship between the response of soybean farmers to an increase in farm income using the chi-square. Chi-Square is a statistical test used to test hypotheses if the population consists of two or more classes where the data is categorical [5]. Chi-Square test was performed using computer-aided software with a significant level of $p > 0.05$ (95% confidence level). Basic decision making with a 95% confidence level : ¹⁴

- a. If the sig value ¹⁰ > 0.05 then the research hypothesis is rejected.
- b. If the sig value is $p < 0.05$, the research hypothesis is accepted [4].

The basic formula of Chi-Square according to Sugiyono [5], as below:

$$(x^2) = \frac{\sum(f^0 - fe)}{fe} \quad (1)$$

Information: x^2 : Chi-square value
 fe : Expected frequency
 f^0 : Frequency obtained

3. Results and discussions

3.1. The response of farmers respondents to special efforts program (UPSUS)

Pajale's Special Efforts Program (UPSUS) conducted at the three research sites, namely the supply and use of superior seeds to increase land productivity and farmer production. In this case, farmers who received rice seedlings were the Tocinae Farmers Group, the Ajang Ale Farmers Group, and the Sipakatau Farmers Group. The response of farmers observed in the field research is related to the fulfillment of the right rules (number, type, quality, time and place) in the distribution of superior seeds and how the suggestions submitted by respondent farmers to the implementation of the Special Efforts Program (UPSUS) subsequently.

Table 1. The response of farmers respondents to special efforts program (UPSUS) in Kajaolaliddong Village, Barebbo District, Bone Regency, Attang Salo Village, Marioriawa District, Soppeng District, and Tancung Village, Tanasitolo District, Wajo District, 2017.

Farmers group	Interval score	Number of respondents	Percentage (%)
To Cinae (Kajolaliddong Village)	Very dissatisfied (5-9)	0	0
	Dissatisfied (10-13)	0	0
	Not satisfied (14-17)	0	0
	Satisfied (18-21)	20	80
	Very satisfied (22-25)	5	20
Total		25	100
Ajang Ale (Attang Salo Village)	Very dissatisfied (5-9)	0	0
	Dissatisfied (10-13)	0	0
	Not satisfied (14-17)	0	0
	Satisfied (18-21)	4	16
	Very satisfied (22-25)	21	84
Total		25	100
Sipakatuo (Tancung Village)	Very dissatisfied (5-9)	0	0
	Dissatisfied (10-13)	0	0
	Not satisfied (14-17)	17	68
	Satisfied (18-21)	8	32
	Very satisfied (22-25)	0	0
Total		25	100

Table 1 shows that respondent farmers had different responses in Bone Regency. The majority of farmers were satisfied, Soppeng District was delighted with farmers and in Wajo District they were less satisfied with the program. That is because the provision of superior seeds was made enough to help farmers in terms of reducing production costs.

3.2. Farm income

Revenue is the difference between revenue and total costs incurred during the production process. The income in this study is the income obtained from farmers who participated and did not participate in the Pajale UPSUS program in three districts, namely Bobe, Soppeng and Wajo. The income of respondent farmers can be seen in Table 2.

Table 2. The income of respondent farmers who did not participate and who participated in the Pajale Special Efforts Program (UPSUS) in Bone Regency, Soppeng Regency, Wajo Regency, 2017.

Farm income	Non-participating UPSUS value (IDR)	Participate in UPSUS value (IDR)
Bone	4,072,330,-	4,977,966,-
Soppeng	14,292,653,-	14,734,502,-
Wajo	10,140,786,-	10,624,157,-

Table 2 shows the income of farmers who participated and did not participate in the Pajale Special Efforts Program (UPSUS) had a high average income in Soppeng District compared to other districts. This is due to the higher production in Soppeng District compared to Bone and Wajo districts.

3.3. Relationship between farmers' response and income

Each respondent is different, and each has a difference in response to the Special Efforts Program (UPSUS) and terms of the income received from his farm. To find out whether there is a relationship or the relationship between the response and the level of income obtained by farmers, an analysis was performed using the chi-square test.

Table 3. Analysis of the relationship between response and income of respondent farmers participating in the Pajale Special Efforts Program (UPSUS) in Kajaolaliddong Village, Barebbo District, Bone Regency, 2017.

	4 Chi-square tests				
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
4 Pearson chi-square	1.461	1	.227		
Continuity correction	0.497	1	.481		
Likelihood ratio	1.567	1	.211		
Fisher's exact test				.341	.245
Linear-by-linear association	1.403	1	.236		
N of Valid cases	25				

Table 3 shows the results of the analysis of the relationship between the response and income of respondent farmers participating in the Pajale Special Efforts Program (UPSUS) in Kajaolaliddong Village, obtained a p-value of 0.227, using an alpha of 0.05, then a p-value or sig. > 0.05. Thus it can be concluded that there is no effect of the response to the income earned by farmers.

Table 4. Analysis of the relationship between response and income of respondent farmers participating in the Pajale Special Efforts Program (UPSUS) in Attang Salo Village, Marioriawa District, Soppeng District, 2017.

	Chi-square tests				
	Value	Df	Asymp.Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
3 Pearson chi-square	.250	1	.617		
Continuity correction	.000	1	1.000		
Likelihood ratio	.262	1	.609		
Fisher's exact test				1.000	.542
Linear-by-linear association	.240	1	.624		
N of Valid cases	25				

Table 4 shows the results of the analysis of the relationship between the response and income of the respondent farmers participating in the Pajale Special Efforts Program (UPSUS) in Attang Salo Village, obtained a p-value of 0.617 using an alpha of 0.05, then a p-value or sig. > 0.05. Thus it can be concluded that there is no effect of the response to the income earned by farmers.

Table 5. Analysis of the relationship between response and income of respondent farmers participating in the Pajale Special Efforts Program (UPSUS) in Tancung Village, Tanasitolo District, Wajo Regency, 2017.

8 Chi-square tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	5 Exact Sig. (1-sided)
Pearson chi-square	.202	1	.653		
Continuity correction ^a	.000	1	.986		
Likelihood ratio	.203	1	.652		
Fisher's exact test				1.000	.496
Linear-by-linear association	.194	1	.660		
N of Valid cases	25				

8
Table 5 shows the results of the analysis of the relationship between the response and income of respondent farmers participating in the Pajale Special Efforts Program (UPSUS) in the Tancung Village obtained a p-value of 0.653, using an alpha of 0.05, then a p-value or sig. > 0.05. Thus it can be concluded that there is no effect of the response to the income earned by farmers.

4. Conclusions

There is no relationship between the response to the Pajale Special Efforts Program (UPSUS) and the income received by farmers.

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