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## FACTORS RELATING TO FARMERS' INTEREST IN USING CERTIFIED SUPERIOR SEEDS IN FIELD RICE FARMING IN SOUTH SANGATTA VILLAGE

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### Abstract

Rice is one of the most dominant food commodities for most Indonesian people. The government seeks to increase rice production to meet rice demand through the approach of using certified superior varieties. Farmers' interest in using certified superior seeds is influenced by many factors. This research was conducted to determine the relationship between internal and external factors on farmers' interest in using superior certified seed in lowland rice farming in South Sangatta Village. This research was conducted from September 2022 to October 2022 in South Sangatta Village, Sangatta District, East Kutai Regency. The data used are primary data and secondary data. The sampling method used purposive random sampling method with the number of respondents as many as 37 people from a total farmer population of 220 rice farmers. The data of this study were analyzed using the Likert method. The results showed that the factors related to farmers' interest in using certified superior seeds in farming were mostly internal factors, namely farming experience, while external factors that made farmers interested in using certified superior seeds in lowland rice farming were seed assistance from the government.

### Keywords

Rice, Interest, Certified Superior Seed.



## 1. INTRODUCTION

Rice is one of the most dominant food commodities for the majority of Indonesian people because rice is a food ingredient that is easily converted into energy, besides containing sufficient nutrition for the body. To achieve food sufficiency from rice or rice, the government, both since the Dutch colonial period and after independence and up to now, has implemented various policies in line with population growth. Several things that continue to be of concern in increasing production are increasing productivity through various new technologies ranging from providing seeds, and land processing to post-harvest, as well as increasing planting area and harvest area through increasing the rice planting index.

Based on BPS publication data in 2021, it is known that the total rice harvest area is 10.41 million ha with rice production of 54.42 million tons of milled dry grain (GKG). When compared with 2020, the rice harvest area in 2021 decreased by 245.47 thousand ha or 2.30% and production decreased by 233.91 thousand tons or 0.43%, whereas based on BPS rice harvest area data in 2021 East Kalimantan province has a rice harvest area of 66.27 thousand ha. This has decreased compared to the rice harvest area in 2020, namely 73.57 thousand ha. Then, East Kutai Regency also experienced a decline in rice production in 2021 from 17,078 thousand tons of GKG to 13,119 thousand tons of GKG [1].

To increase rice production in terms of realizing food security to balance domestic rice needs, the government has implemented various policies, including policies related to rehabilitating and intensifying irrigation infrastructure, opening new rice fields, and other technological innovations. The government is trying to increase rice production to meet rice demand through the approach of using superior varieties.

The use of certified superior seeds followed by the application of technology in plant cultivation including the use of balanced fertilizer can have a positive influence on increasing productivity, production, and quality of crop yields. In this case, the government then encourages the provision of certified superior varieties of seeds for farmers so that they can be used in their farming businesses and increase rice production itself.

Farmers are agricultural managers who manage their farming business, including the use of certified superior seeds. So far, the adoption of superior seeds in the form of new superior varieties by farmers has taken a long time since they were first introduced. It took at least 10 years for the Ciherang variety to be accepted by farmers to replace IR64 after it was first introduced in the 2000s [2]. This condition shows that the stages of adoption of an innovation are closely related to the time dimension. This can be seen from a person's innovativeness (relatively early or late in accepting innovation) and the speed of adoption of innovation in the social system [3]. The farmers of South Sangatta Village themselves only started using certified superior seeds (VUB) in 2020 and the application of this superior seed technology has not been evenly distributed to all rice farmers in South Sangatta Village. This can be related to many factors considering that the adoption process itself has several stages, namely aware, interest, assess, try, and adopt. Superior rice varieties are a technological innovation that is cheap and their use is very practical [4]. So research related to farmers' interest in the application (adoption) of superior seeds is very important for the development of superior seeds, especially the development of certified superior seeds in Indonesia.

Understanding interest shows the psychological psychological process within a person who wants to make something better based on observations and real experiences, to practically implement

a technological innovation that will provide the benefit of increasing farmers' production through certified superior seeds. By looking at your interests, you can identify the inner drives to accept an innovation or new method which can be started from the appearance of the characteristics you have and can be applied practically.

The farming community consists of various individuals who have different interests in the innovations they already know. This difference in interest will determine the farmer's attitude to accept or reject the certified superior seed technology innovation that he already knows about, so that it will be related to the application of certified superior seed technology innovation and have an impact on the production produced on his farming land. Farmers' interest in using certified superior seeds is related to many factors. In this research, the factors that are thought to be factors related to farmers' interest in using certified superior rice seeds in South Sangatta Village are internal factors consisting of land area, income, and farming experience, as well as external factors consisting of seed prices, participation farmer groups, and seed assistance. while other factors are considered constant.

## **2. MATERIALS AND METHODS**

### **2.1 Time and place**

This research was carried out from August to October 2022 in South Sangatta Village, South Sangatta District, East Kutai Regency, East Kalimantan Province, Indonesia.

### **2.2 Method of collecting data**

The data collected consists of (a) primary data obtained by direct observation at the research location and conducting interviews with respondents, namely farmers in the research area, guided by a list of questions/questionnaires, and (b) secondary data is data obtained from the Agricultural Extension Center (BPP) office and village offices or other agencies in the form of annual reports, monographic data, and other sources that support this research.

### **2.3 Sampling Method**

Most of the farmers in Sangatta Selatan Village are farmers whose farming activities include several rice farming groups that have used certified superior rice seeds either by purchasing them themselves or by assisting in procuring seeds from extension workers through the relevant Department. In this study, the sample of respondents came from farmers who were members of active farmer groups that were registered in the Agricultural Extension Management Information System (Simluhtan). The sample was determined using a purposive random sampling method or direct appointment by selecting group leaders and active members as samples for each farmer group, totaling 37 respondents.

### **2.4 Data analysis method**

Data analysis uses the Likert method [5], for filling out the questionnaire there are alternative answers available for each item so that respondents can choose one answer that suits their own opinions and circumstances. There are three choices used for each statement item in the measurement. The three alternatives that will be used are given scores of 1, 2, and 3 as presented in Table 1.

**Table 1.** Research Questionnaire Answer Scores

Answer	Symbol	Score
Not Related	TB	1
Relate	B	2
Very Relate	SB	3

**Source:** Primary Data (processed), 2022

Furthermore, the assessment (score) of internal factors and external factors, as well as the assessment of the level of relationship between internal factors and external factors are presented in Tables 2, 3, 4, 5, and 6.

**Table 2.** Assessment (score) of Internal Factors

Factors	Minimum Score	Maximum Score
Land area	4	12
Income	4	12
Farming experience	4	12
Amount	12	36

**Source:** Primary Data (processed), 2022

**Table 3.** Assessment (score) of External Factors

Factors	Minimum Score	Maximum Score
Seed Prices	4	12
Farmer Group Participation	4	12
Seed Assistance	4	12
Amount	12	36

**Source:** Primary Data (processed), 2022

**Table 4.** Assessment (score) of Internal and External Factors (Combined)

No	Factors	Minimum Score	Maximum Score
<b>Internal</b>			
1	Land area	4	12
2	Income	4	12
3	Farming experience	4	12
<b>Ekst</b>			
1	Seed Prices	4	12
2	Farmer Group Participation	4	12
3	Seed Assistance	4	12
	Amount	36	72

**Source:** Primary Data (processed), 2022

**Table 5.** Assessment (score) of the Level of Relationship between Internal Factors

No	Class Interval	Relationship Level
1	12,00 -20,00	Not Related
2	21,00 -28,00	Relate
3	29,00 - 36,00	Very Relate

**Source:** Primary Data (processed), 2022

Next, class intervals are determined for each external factor as presented in Table 6.

**Table 6.** Assessment (score) of the Level of Relationship between External Factors

No	Class Interval	Relationship Level
1	12,00 - 20,00	Not Related
2	21,00 - 28,00	Relate
3	29,00 - 36,00	Very Relate

**Source:** Primary Data (processed), 2022

The next step is to determine class intervals for all factors related to farmers' level of interest in using certified superior seeds as presented in Table 7.

**Table 7.** Assessment (score) of the level of relationship between internal and external factors

No	Class Interval	Farmer Interest Level
1	36,00 - 48,00	Not interested
2	49,00 - 60,00	Interest
3	61,00 - 72,00	Very interest

**Source:** Primary Data (processed), 2022

### 3. RESULTS AND DISCUSSION

#### 3.1 Internal Factors Related to Lowland Rice Farmers' Interest in Using Certified Superior Seeds

In this research, internal factors related to farmer interest consist of land area, income, and farming experience. Measurement of interest in internal factors was carried out using interviews outlined in a questionnaire containing three predetermined internal factors. The results of research regarding internal factors related to farmers' interest in using certified superior rice seeds in Sangatta Selatan Village can be seen in Table 8.

**Table 8.** Internal Factors Associated with Lowland Rice Farmers' Interest in Using Certified Superior Rice Seeds in South Sangatta Village

No	Factors	Amount Score	Average score	Category
1	Land Area	270	7,30	Relate
2	Income	274	7,41	Relate
3	Farming experience	400	10,81	Very Relate
	Total	944	25,51	Relate

**Source:** Primary Data (processed), 2022

The research results presented in Table 8 show that the land business experience factor is strongly related to farmer interest with a score of 10,81, and the land area and income factors are related to farmer interest with scores of 7,30 and 7,41 respectively.

#### 3.2 External Factors Related to Lowland Rice Farmers' Interest in Using Certified Superior Seeds

In this research, external factors related to farmer interest have been determined, consisting of seed prices, participation in farmer groups, and seed assistance. Measurement of interest in external

factors was carried out using interviews outlined in a questionnaire containing three predetermined external factors. The following details of external factors related to farmers' interest in using certified superior rice seeds in Sangatta Selatan Village can be seen in Table 9.

**Table 9.** Details of external factors related to farmers' interest in using certified superior rice seeds in South Sangatta Village

No	Factors	Amount	Average Score	Category
1	Seed Prices	260	7,03	Relate
2	Farmer Group Participation	347	9,38	Very Relate
3	Seed Assistance	355	9,59	Very Relate
Total		962	26,00	Relate

**Source:** Primary Data (processed), 2022

The research results presented in Table 9 show that the factors of participation in the land group and seed assistance are strongly related to farmer interest with scores of 9,38 and 9,56 respectively, while seed prices are related to farmer interest with a score of 7,03.

### 3.3 Level of Relationship between Internal and External Factors on Farmers' Interest in Using Certified Superior Seeds in Rice Farming in South Sangatta Village

The results of research regarding the level of interest of farmers in using certified superior seeds related to internal and external factors in Sangatta Selatan Village are presented in Table 10.

**Table 10.** Level of Relationship between Farmers' Interest in Using Certified Superior Rice Seeds in South Sangatta Village with Internal Factors and External Factors

No ^	Factors	Amount Score	Average Score	Category
<b>Internal</b>				
1	Land Area	270	7,30	Relate
2	Income	274	7,41	Relate
3	Farming experience	400	10,81	Vary Relate
Total		944	25,51	Relate
<b>External</b>				
1	Seed Prices	260	7,03	Relate
2	Farmer Group Participation	347	9,38	Very Relate
3	Seed Assistance	355	9,59	Very Relate
Total		962	6,00	Relate
Overall total		1.906	51,51	Relate

**Source:** Primary Data (processed), 2022

Based on the research results in Table 10, show that internal factors and external factors that are closely related to farmers' interests are farming experience, participation in farmer groups, and seed assistance: and factors that are related to farmers' interest in using certified superior seeds are land area, income and price. seed. Overall, these internal and external factors are related to farmers' interest in using certified superior seeds in South Sangatta Village. This is explained by [6] and [7] that each farmer has different interests in carrying out his farming business. A farmer's interest is defined as a condition where someone is interested in something and becomes a driver for someone to take action to achieve their goals. Furthermore, it was stated by [8] that interest is essentially a cause and effect of experience. Interest develops as a result of an activity and will be the reason it will be used again in the same activity. Furthermore, [9] states that experience is knowledge or skills that a person knows and masters as a result of actions or work that have been done previously over a certain period which can influence a person's interest in what they are doing. The results of this research are in line with the results of the research reported by [10] that land area and income have a very real effect on farmers' interest, while assistance and farming experience have a real effect on farmers' interest, whereas education has no real effect on interest. farmer. With the  $R^2$  Determination contribution value, the influencing factors are land area, experience, income, assistance, and education at 72%. Other research results reported by [11] stated that the factors that influence farmers to use superior and local varieties of seeds are age, education, experience, land area, seed prices, production, and income. Factors that have a significant influence in influencing farmers to use superior and local varieties of seeds are age, experience, seed prices, and income.

#### **4. CONCLUSIONS AND RECOMMENDATIONS**

##### **4.1 Conclusion**

Based on the research results obtained, the conclusion is that the factors related to farmers' interest in using certified superior seeds in farming are the greatest internal factors, namely farming experience, while the external factors that make farmers interested in using certified superior seeds in lowland rice farming are seed assistance from the government.

##### **4.2 Suggestion**

Based on the research results, it can be suggested that:

1. If the district government distributes seed aid, it would be best to reconsider adjusting the need for seed varieties that are suitable and preferred by rice farmers in South Sangatta Village.

The role of agricultural instructors is very important in guiding and facilitating farmers in increasing farmers' interest in using certified superior rice seeds as an example to increase farmers' interest in using certified superior seeds. Then, to overcome the availability of seeds themselves, extension workers can encourage and facilitate rice farmers and related parties to become certified superior seed breeders for rice farmers, especially in South Sangatta Village, South Sangatta District

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