

Problems and farmer's perceptions of the Farmer Card Program in Jember District

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Abstract. Subsidised fertiliser is a government's effort to increase the purchasing power of farmers in meeting their agricultural input needs by setting the highest retail price (HET). It is intended to be the highest price that can be charged for subsidised fertilisers. Based on the regulations that have been in place since 2017, the distribution of subsidised fertilisers is carried out through the Farmer Card. However, in its implementation thus far, the Farmer Card has not been optimally used for both fertiliser purchase transactions and agricultural credit collection. The purpose of this study is to determine farmers' perceptions and factors influencing farmers' adoption of the card in Jember District. The data analysis method used was descriptive analysis using weighted average index analysis and binary logistic regression. The results showed that access to information and the certainty of benefits in obtaining subsidised fertilisers were included in the strong category influencing farmers' perceptions of the card. This means that farmers have high enthusiasm for using the Farmer Card but are not supported by available information and facilities. Therefore, the role of extension workers and supporting facilities is needed to implement this program immediately.

1 Introduction

The Farmer Card Program is a form of government follow-up in the context of improving subsidised fertiliser policy, which aims to ensure transparency and accountability in the implementation of subsidised fertiliser distribution. The program was first introduced in 2016 but was officially established as a transaction tool for subsidised fertiliser redemption in 2017 in Permentan No. 47/Permentan/SR.310/12/2017. The issuance of the Farmer Card Program is carried out in cooperation with HIMBARA (Association of State-Owned Banks), one of which is Bank Nasional Indonesia for the East Java region. Subsidised fertiliser redemption transactions through the Farmer Card can be performed automatically through electronic data capture (EDC) machines available at official agricultural kiosks. The benefits of the Farmer Card are not limited to the redemption of subsidised fertiliser but can also be used for banking services such as an ATM card.

Based on a study conducted by the House of Representatives Expertise Agency DPR RI on the implementation of the Farmer Card Program in Indonesia in 2020, East Java is one of

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the regions with a relatively high distribution of cards. However, it is still very rarely used by farmers [1]. This condition is caused by various constraints in the implementation of the Farmer Card, such as what happened in Jember District. The constraints include the uneven distribution of cards, the unpreparedness of facilities in the form of EDC devices at kiosks, the lack of socialisation of the card, the low culture of savings among farmers, and the non-implementation of the Farmer Card as a means to redeem subsidised fertilisers. These constraints are a consideration for farmers to activate the Farmer Card.

The emergence of the Farmer Card Program is an innovation for farmers, so socialisation is needed to provide farmers with knowledge and understanding of both the benefits and how to use it to be accepted. The form of adoption by farmers can be seen through the stages of recognition, desire to have, and evaluation to use. The availability of information and good communication is needed, especially in shaping farmers' perceptions. Therefore, it is necessary to have the role of various parties, including the government, banks, agricultural extension workers and farmer groups, for the success of this program.

Based on several previous studies [1–5], factors influencing farmers' adoption decisions on the Farmer Card Program include education level, innovation characteristics, farmer perceptions, age, duration of farming, and institutions. Farmers perceive that the Farmer Card is not well-socialised and find it difficult to use this card. On the other hand, they feel that this program can provide security in obtaining subsidised fertilisers [6]. The role of farmer groups and related institutions can also cause a significant relationship between the level of farmers' knowledge and the effectiveness of the implementation of the Farmer Card Program [7].

Previous studies only discuss factors influencing farmers' decisions in adopting the Farmer Card Program. However, they have not explained how farmers' perceptions affect their access to information and benefits as well as their understanding of how to use the card. Additionally, they have not explored how the size of cultivated land owned by farmers affects the card benefits in accessing KUR Tani to obtain additional capital. Therefore, this study will discuss in more detail the farmers' perceptions and their influence on the adoption decision, as well as an overview of the implementation of the Farmer Card Program that has been carried out in Jember District, especially in Bangsalsari and Wuluhan Subdistricts. The level of farmers' perception of the card can indicate how enthusiastic and supportive farmers are of this program, which leads to a decision whether they want to accept or reject it. The results of this study can help determine the importance of farmers' perceptions of the Farmer Card Program and provide consideration for the regulation of input subsidy distribution policies in the agricultural sector.

2 Methodology

This study was conducted in Jember District, particularly in Bangsalsari and Wuluhan Subdistricts, which are among the rice production centres in East Java. Bangsalsari Subdistrict had the most extensive rice fields in Jember, and Wuluhan Subdistrict had the highest rice productivity in 2020 [8]. These characteristics are based on the variables used in the study and are assumed to have different levels of Farmer Card adoption. The method used was descriptive analysis with data collection techniques through the distribution of questionnaires, interviews, observation, and documentation.

The sampling method in this study was a nonprobability sampling technique, so the sample was not randomly selected because the researcher did not know the exact population size of farmers receiving Farmer Cards. The criteria for respondents used in this study were farmers who received Farmer Cards, especially in rice commodities, with a sample size of 60 respondents (30 farmers who did not use and 30 farmers who used the cards). From two

categories of respondents, 20 Wuluhan and 10 Bangsalsari farmers used the cards, while 10 Wuluhan and 20 Bangsalsari farmers did not use the cards.

Farmers' perceptions of the Farmer Card Program were analysed using descriptive methods. The data used was qualitative data obtained through surveys, quantified using Likert scale techniques, and then analysed using the weighted average index (WAI) method. The WAI method analyses data by considering the weight of each respondent's answer. The WAI value obtained from primary data can be systematically expressed as follows:

$$\text{Weighted average index (WAI)} = \sum \frac{S_i F_i}{N} \quad (1)$$

where WAI value is $0 \leq \text{WAI} \leq 1$, F_i is the frequency of respondents voting, S_i is the weight scale, and N is the total number of respondents (persons). The weighted values and their criteria are as follows: 1.00–0.81 is very strong, 0.80–0.61 is strong, 0.60–0.41 is moderate (medium), 0.40–0.21 is weak, and 0.20–0.00 is very weak.

Binary logistic regression with ratio and dummy data was used to analyse the factors influencing farmers' decisions to adopt the Farmer Card Program. The variables used in the study included farmers' age, education level, duration of farming, number of family members, land size, and farmer's perception. The dependent variable that shows the participation of farmers in the Farmer Card Program is done by using binary numbers ($Y = 0$ for farmers who use farmer cards, $Y = 1$ for farmers who do not).

$$Y(x) = \ln \left(\frac{y(x)}{1-y(x)} \right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 D_1 \quad (2)$$

where β_0 is the intercept (constant), X_1 is age (years), X_2 is education level (years), X_3 is the duration of farming (years), X_4 is the number of family members (persons), X_5 is land size (ha), and D_1 is farmer perception (dummy: 1 = high, 0 = low)

The use of the Farmer Card Program for rice farmers in Jember District will be explained descriptively through in-depth interviews with identified key informants. The key informants used consisted of one person from the District Agriculture Office, two persons from agricultural extension coordinators, and one person from a farmer group leader in each subdistrict.

3 Results and discussion

As shown in the data in Table 1, the age characteristics of the respondent farmers are 70% in the age group of 44–55 years, so they can be categorised in the productive age group of farmers. Farmers in this age group tend to support the Farmer Card Program because they already know and understand its benefits. In contrast, farmers in the nonproductive age group tend to be unfamiliar with banking technology and do not have a culture of saving. Regarding education, 28.3% of the farmers surveyed had a high school education, which means they had a good level of knowledge. Farmers' knowledge can also be acquired through farming experience. Based on farming experience, 56.7% of the farmers have more than 20 years of experience, so the information on farm management is sufficient and can help the farmers make changes. Other factors include the number of family members and land ownership. 96.7% of the farmers had 2–5 family members, and 80% had a land area of 0.5–1 ha. Both factors can affect farmers economically, where the greater the number of family members and land area, the greater the burden of life and business capital owned.

Table 1. Distribution of the characteristics of the respondent farmers.

No	Description	Number of respondent farmers	Percentage (%)
1	Age		
	<40 years	6	10.0
	40–55 years	42	70.0
	>55 years	12	20.0
2	Education		
	Did not go to school/did not graduate elementary school	5	8.3
	Graduated from elementary school	16	26.7
	Graduated junior high school	15	25.0
	Graduated senior high school	17	38.3
	College graduate	7	11.7
3	Business experience		
	<5 years	0	0.0
	5–10 years	6	10.0
	11–20 years	20	33.3
	>20 years	34	56.7
4	The number of family members		
	<2 person	2	3.3
	2–5 person	58	96.7
	>5 person	0	0.0
5	Rice field size		
	<0.5 hectares	3	5.0
	0.5–1 hectares	48	80.0
	>1 hectares	9	15.0
	Total number of respondents	60	100.0

3.1 Farmers' perceptions of the Farmer Card Program

As one of the technological innovations, the Farmer Card Program requires time and a series of adoption processes before being implemented by user farmers, so farmers' perceptions of this program are critical to note. The farmers' perception of the card was 63% in the high category, while the remaining 37% were in the low category. The following are the results of analysing farmers' perceptions of the Farmer Card Program.

The characteristics of an innovation are one of the urgencies that can influence farmers' perceptions as a basis for making decisions to accept an innovation or vice versa [9]. Based on Table 2, a strong factor that encourages the use of Farmer Card is the availability of access to information about Farmer Cards. This can be explained because implementing Farmer Cards requires the cooperation of all parties, including the Agricultural Extension Office, farmer groups, and farmers. The bank carried out socialisation to farmers at the village hall in 2019. However, this socialisation was carried out only once along with the card distribution activities and was not conducted regularly.

Table 2. Result of WAI analysis of farmers' perceptions of the Farmer Card Program.

No	Indicator	WAI value	Category
1	Access to information about Farmer Card	0.67	Strong
2	Understanding how to use the Farmer Card	0.60	Medium
3	Benefits of using the Farmer Card to obtain subsidised fertiliser	0.64	Strong
4	Socialisation of the use of the Farmer Card through the distribution kiosk	0.20	Very weak
5	Availability of facilities and infrastructure	0.52	Medium
6	Farmer's access to banking	0.59	Medium

The role of agricultural institutions is vital to support the successful implementation of the Farmer Card Program. The socialisation of the card that can be done at this time is still limited to using the KUR Tani access of Bank BNI and opening an account book to activate the card. The parties regularly conduct outside of these meetings, and farmers can also coordinate through social media groups or meet directly with extension workers when there are issues to be discussed. Social media communication can help control and monitor the Farmer Card Program so that developments regarding the sustainability of the program can be adequately communicated [10].

Some respondent farmers with a relatively young age have a better understanding of how to apply the card, contrary to older farmers. Some farmers felt that the Farmer Card Program would make it difficult for farmers if the cash redemption of subsidised fertiliser had to be eliminated altogether. This is because farmers' primary income comes from agricultural activities, and their saving habits are still relatively low. A previous study showed that farmers do not want the implementation of the Farmer Card to eliminate the redemption of subsidised fertilisers in cash without clear assistance [11]. Farmers' reluctance to use the Farmer Card is due to their limited ability to fund the account, unfamiliarity with using smart cards, and lack of support [12].

The farmer perceives that the benefits of the card are very strong. This is due to the transparency of the fertiliser quota that can be seen through the machine tool. Using the card also makes it easier for the kiosks to provide subsidised fertiliser purchases per the farmer's quota. Farmers have a positive perception of the Farmer Card Program in terms of benefits, implementation, and results so that it can guarantee the need for subsidised fertiliser and promote saving habits among farmers. This is expected to minimise problems related to the misuse of subsidised fertilisers [12].

However, farmers perceive that socialisation of the card by the kiosk distributors is a very weak one of the obstacles in implementing the Farmer Card is caused by EDC machine tools that are not ready or not yet connected to the system. This condition causes frequent problems, such as a mismatch in the quota of subsidised fertiliser when a fertiliser purchase transaction is made or the fertiliser quota is not read. Therefore, the bank is again withdrawing EDC devices from several distribution kiosks, and the government is addressing these obstacles by integrating the T-Pubers application with the Farmer Card system. A previous study showed that farmers had a weak perception of the use of Farmer Cards due to the use of cards that are not needed nationally and the lack of introduction from distribution kiosks [6].

Farmers' perception of the availability of facilities and infrastructure is adequate, where subsidised fertiliser redemption points are available with approximately 21 kiosks in Bangsalsari Subdistrict and 36 kiosks in Wuluhan Subdistrict. This shows that the infrastructure for farmers to obtain subsidised fertiliser through the Farmer Card is sufficient, but this condition has not been supported by technological means, namely, EDC tools. This statement is supported by a previous study [10] that the availability of fertiliser redemption

points will affect the effectiveness of the Farmer Card Program in Proppo Subdistrict, Pamekasan District. Coordination and communication between farmers and kiosks are also quite good, as indicated by an active association group on WhatsApp media, so problems or obstacles can be resolved immediately.

Farmers' perceptions of access to banks are included in the sufficient category because farmers' access to Farmer Cards requires a fairly lengthy process. The lack of certainty regarding the use of the card is also one of the reasons why farmers are reluctant to activate it. Farmers' access to bank branches is also quite distant due to the unavailability of branches, especially Bank BNI in both Bangsalsari and Wuluhan Subdistricts. The bank's socialisation and promotion of the use of the Farmer Card does not involve different parties, so its implementation can be said to be unsuccessful because it has not brought tangible benefits to farmers [6].

3.2 Factors informing farmers' decisions to adopt the Farmer Card Program

Farmers' decisions to adopt the Farmer Card Program can be influenced by several factors, both internal and external (explained in Table 3).

Table 3. Result of variable analysis in the equation.

Variable	B	SE	Wald	Df	Sig.	Exp(B)
Constanta	-0.246	3.507	0.005	1	0.944	0.782
Age (X ₁)	-0.075	0.080	0.871	1	0.351	0.928
Education (X ₂)	0.206	0.102	4.023	1	0.045*	1.228
Farming experience (X ₃)	0.149	0.069	4.648	1	0.031*	1.161
Number of family members (X ₄)	-1.077	0.426	6.381	1	0.012*	0.341
Land size (X ₅)	0.767	0.968	0.627	1	0.428	2.153
Farmer perceptions (X ₆)	1.544	0.785	3.870	1	0.049*	4.681

Note: * significant at the 5% level

Table 3 shows that several variables significantly influence farmers' decisions to adopt Farmer Cards, such as education, farming experience, number of family members, and farmers' perceptions. In contrast, other variables like age and land size do not significantly influence farmers' decisions. The resulting binary logistic regression model can be systematically written as follows.

$$Y(x) = \ln \left(\frac{y(x)}{1-y(x)} \right) = -0,246 - 0,075X_1 + 0,206X_2 + 0,149X_3 - 1,077X_4 + 0,767X_5 + 1,544D_1$$

The age variable has an insignificant impact on the farmers' decision to adopt the Farmer Card Program. This is because the average age of the respondent farmers is 50 years and above (50% of the respondents), so farmers tend to have low absorptive capacity and are slow to adopt innovations. The respondents' understanding of the Farmer Card Program is generally only a transaction tool for purchasing subsidised fertiliser, so knowledge of other benefits of the Farmer Card, such as KUR Tani, is still low. This statement is also supported by a previous study [1] that shows that the age variable has no significant opportunity for farmers' adoption of the card.

The farmer's education variable significantly and positively impacts the farmer's decision to adopt the Farmer Card Program. The characteristics of the education level of the respondent farmers can be categorised into three categories, namely, 8.3% low (<6 years), 51.7% medium (6–9 years) and 40% high (>9 years). The higher the education level of the

farmers, the easier it is for them to accept new technologies. Farmers with higher levels of education will be more open and find it easier to understand the application of new technologies to develop better production results [4].

The variable of farming experience may also influence farmers' decisions to adopt the Farmer Card Program. The farming experience can be a nonformal education for farmers, where they face various obstacles while doing their farming activities. As a result, farmers have broader insights and tend to be more critical of innovations. This statement aligns with a previous study [4] that shows that with the experience of farmers, farmers can feel the difficulty of obtaining subsidised fertilisers promptly, so the existence of the Farmer Card can minimise the problem of scarce subsidised fertilisers.

The variable number of family members in farmers' decisions to adopt the Farmer Card shows significant and negative analysis results. This is because most farmers have several family members who are still dependent (2–5 persons, 96.7% of the respondents). The greater the number of dependents in the family, the more needs and costs must be prepared. The number of dependents in the family can affect the level of adoption by farmers. The farmers interviewed felt that if subsidised fertiliser purchases had to be made through farmer cards, they would have difficulty setting aside funds for and meeting family needs [13].

The land area variable has an insignificant impact on farmers' decisions. This is consistent with the research [1] that the land area variable has no significant effect because there is no significant difference between the land area of farmers who adopt farmer cards and farmers who do not. One of the requirements for farmers receiving farmer cards is to have at least 2 hectares of land. Based on field conditions, most of the farmers surveyed have a cultivated rice field area of 0.5–1 ha (80%), indicating that the size of the rice field area does not significantly affect the farmer's adoption decision. Farmers who use the Farmer Card and apply for KUR Tani loans are not only used as additional farm capital but also for other businesses.

The farmer perception variable significantly and positively affects the decision to adopt the Farmer Card. The farmer respondents' perception of the Farmer Card is that it can help farmers obtain subsidised fertiliser because the quota owned by the farmers is recorded in the system, so the possibility of fraud through kiosks or transfer of fertiliser quota can be minimised. Farmers' perceptions of the card include benefits, ease of access and use, and program implementation. The perceptions of farmers who have adopted the Farmer Card are better than those who have not used it [1]. The easier the access to information for farmers is, the better the intensity with which farmers obtain information. The difference in farmer perception based on the environment and the extent of farmer access significantly impacts the card [14].

3.3 Use of Farmer Cards in Jember District

Farmer Cards in Jember District have been distributed since 2017, but only in certain areas, such as Dukuh Mencek Village, Sukorambi Subdistrict and Sukorejo Village, Bangsalsari Subdistrict as selected villages, and then started to spread widely in 2019. The use of the Farmer Card is still limited because the e-RDKK (farmer group plan for fertiliser need) and T-Puber application systems are in the adjustment phase, and the distribution process of the cards to farmers is not comprehensive, so its use cannot be enforced. The implementation of the Farmer Card for farmers in Jember can be seen through the use of smallholder farmer credit (KUR-Tani), especially Bank BNI. The implementation of this policy will be seen through seven parameters: 1) access, 2) coverage, 3) frequency, 4) distribution variety, 5) service accuracy, 6) accountability, and 7) program suitability to needs. The following is an explanation of each parameter.

The access indicator is used to determine how farmers can obtain information about the Farmer Card. Information about agricultural programs, especially the Farmer Card, is well accessible. This is because farmers can also meet or consult directly with extension workers. The social network between all elements, including farmers, extension workers and kiosks, is also good. This can be seen through the provision of information and consultations carried out online so that communication is easily accessible. Follow-up by extension workers in Bangsalsari and Wuluhan Subdistricts regarding the Farmer Card Program was also carried out by visiting each village and distribution kiosk and attempting to conduct socialisation through mass media such as radio. The subdistricts started to support the implementation of the Farmer Card Program by working on mobile socialisation using a car and putting up posters. However, since the Farmer Card Program cannot yet be used to redeem subsidised fertiliser and the EDC machine tool at the kiosk has been temporarily withdrawn, fertiliser distribution is still wholly manual.

Farmers can also access information on KUR Tani through BNI bank agents. Bank agents can assist farmers in banking transactions such as the administrative process of applying for KUR, loan disbursement, instalment payment, and transfer or withdrawal of funds so that farmers do not need to come to the branch. This can make it easier for farmers, as BNI Bank branches in Bangsalsari and Wuluhan Subdistricts are unavailable. The BNI Farmer KUR application has advantages over other banks in that it has an interest rate of 0.5% and loans without collateral. Still, the administrative process requires a recommendation from the head of the farmer group. The mechanism of loan disbursement in the field is different, either immediately at the beginning of the season or gradually. The head of the farmer group also acts as a collection agent, invoicing farmers who have been previously recommended for payment of the farmer's obligations to BNI Bank and monitoring the production process of crops. One of the obstacles that farmers often face is the occurrence of bad loans, which creates a bad image for the farmer group and prevents other farmers from applying for loans. This is one of the considerations for the farmer group leader when making recommendations to farmer members.

The coverage parameter shows what percentage of farmers in Jember District have received the card. Based on data from the East Java Provincial Agriculture and Food Security Office, the distribution of farmer cards in Jember District in 2022 was 27%. Problems often encountered in the implementation of farmer cards include e-RDKK data that have not been combined with electronic systems for extension worker (SIMLUHTAN) data and information systems for civil society (SIK DUKAPIL) data, so there are still some farmers who do not have farmer cards and some who are even double counted. However, agricultural extension officers continue to assist farmers in collecting data to apply for farmer cards.

The frequency parameter is used to determine the extent to which a policy is implemented by how often services are provided. The distribution of Farmer Cards in Jember is performed once a year in stages by the banks in each region, but if farmers are not present, card collection can be performed at the bank branch. One of the reasons for the low distribution of Farmer Cards is that farmers are reluctant to attend card distribution activities because subsidised fertiliser purchases can still be made without using the card. The distribution of subsidised fertiliser takes place every year during three planting seasons. Problems regarding the distribution of subsidised fertiliser in Jember District, especially in Bangsalsari and Wuluhan Subdistricts, can be said to be rare; this is indicated based on the condition of farmers in the field where farmers can obtain fertiliser according to the time and quota-owned in the E-RDKK.

The following parameter is distribution variety, which determines the implementation of the distribution allocation of Farmer Cards and subsidised fertilisers and whether there are deviations from the predetermined targets. The collection of Farmer Cards at banks must be done directly or personally by the farmers concerned by bringing their ID cards (KTP) and

Family Cards (KK). This is to minimise misuse of the cards. The shortcomings in implementing card distribution are the lack of communication and involvement of other parties, such as farmer groups and extension workers. Hence, data collection on farmers who have received Farmer Cards is not yet available. Although the distribution of subsidised fertiliser is still performed manually, both the kiosks and the farmers have records of their fertiliser collection. They need to show their ID cards. This minimises problems of discrepancy or bias.

The accuracy parameter is used to determine the timeliness of policy implementation. The Farmer Card is an initiative implemented by the government to monitor the distribution of subsidised fertiliser and provide transparency to farmers. The program was launched in 2016, and in the following year, 2017, a trial was conducted in five provinces in Indonesia. The results of the trial were then gradually re-evaluated. However, implementing the farmer card in Jember District was not mandatory because it was not evenly distributed to all farmers, and the system facilities were not ready. This aligns with the previous study [15], which shows that until now, the card cannot be used to purchase subsidised fertiliser.

The accountability parameter describes the accountability carried out by the Agricultural Extension Office (BPP) for implementing the Farmer Card Program and subsidised fertilisers. In implementing the program, farmers can obtain their rights to receive a Farmer Card, agricultural extension services, and assistance in the agricultural program, especially in applying for subsidised fertilisers. The shortcomings in accountability for the distribution of Farmer Cards are that the BPP does not yet have an archive of records of farmers who have and have not received Farmer Cards, as only the banks have access to the data. The efforts of extension workers as a form of transparency in the allocation of subsidised fertiliser are to allow farmers the freedom to determine the allocation of subsidised fertiliser quotas they own through e-RDCK and to coordinate with the retail kiosks so that there is no reduction in fertiliser quotas at the kiosks. The implementation of the fertiliser distribution policy in Jember District that the fertiliser distribution process by implementing actors runs well in accordance with the technical implementation instructions, and the bureaucratic structure has been fulfilled in accordance with the established flow, including the role of agricultural extension workers (PPL) to conduct supervision and evaluation at retailer fertiliser kiosks [16].

Parameters of program suitability to needs can be seen through farmers' perceptions of adopting the Farmer Card. The Farmer Card Program provides convenience for farmers and kiosks in conducting subsidised fertiliser purchase transactions because the collection of fertiliser quota data can be systematically recorded. However, the government should also consider subsidised fertiliser regulation and technical redemption to simplify it [17]. In addition, the use of Farmer Cards also provides facilities to apply for credit to increase their business capital. The government hopes that the card can also be valid as a means for the government to distribute aid or other agricultural programs. Thus, the existence of the program can be an alternative solution to the problems experienced by farmers as well as a control medium for the government so that the programs provided are right on target for eligible farmers [18].

4 Conclusions and policy recommendations

Based on the study results, it can be concluded that the farmers' perception of the Farmer Card Program in Jember District is 63%, including the high category. Indicators strongly influencing these perceptions are access to information about the cards and the certainty of benefits in obtaining subsidised fertilisers. Factors that significantly influence farmers' decisions to adopt Farmer Cards include education, farming experience, number of family members, and farmers' perceptions. The influence of these variables impacts farmers'

decision-making, where perceptions, education, and farming experience are positive indicators of farmers' knowledge and ability to understand and adapt to technology. Meanwhile, the variables of the number of family members and land size affect farmers economically in terms of business capital.

Based on the ease of access and information coverage, it can be said that the implementation of the use of Farmer Cards in Jember District is well accessible. However, based on the timeliness of its use, it still cannot be used because it is in the process of card distribution and data integration. Therefore, it can be recommended that the government immediately follow up on the implementation of the Farmer Card Program nationwide and reconsider the regulation of fertiliser redemption using the Farmer Card so that farmers can easily implement it. The card distribution mechanism must also be improved by involving other institutions, such as farmer groups and agricultural extension workers. Further research can discuss the evaluation of the Farmer Card Program from the perspective of farmers as users and kiosk owners so that the research will be more comprehensive.

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